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ABSTRACT

From 1989 to 1991, the German Foundation for International Development has organized a series of seminars and training courses for Eastern African countries given in concert with national and regional partner organizations to assist in providing improved information and documentation services. Selected papers and lecture notes from three training courses on information resource sharing and networking are presented. Part 1 contains the following papers from the three courses: (1) "A National Information Service" (James M. Ng'ang'a); (2) "Resource Sharing" (James M. Ng'ang'a); (3) "Networks: An Overview" (Edward Waiguru Muya); (4) "Bibliographic Control" (James M. Ng'ang'a); (5) "Collection Development" (James M. Ng'ang'a); (6) "Information Management--Indexing" (Edward Waiguru Muya); (7) "Information Management--Thesaurus" (Edward Waiguru Muya); (8) "Information Management--Retrieval" (Edward Waiguru Muya); (9) "Abstracting" (Augustes Musana); (10) "Records Management" (Augustes Musana); (11) "Computer Applications in Libraries and Documentation Centres: What a Manager Needs To Know" (Jacinta Were); (12) "Developing Marketing Strategies for Libraries, Archives and Documentation Centres" (James M. Ng'ang'a); (13) "Financial Resources Mobilization and Utilization" (James M. Ng'ang'a); (14) "Cooperation and Resource Sharing" (Cecile Wesley); (15) "Information Networks" (Cecile Wesley); (16) "National Information Systems" (Cecile Wesley); (17) "Communication in Libraries" (Getachew Birru); (18) "Strategies for Improving upon Reference Services" (Getachew Birru); and (19) "Current Awareness Services and Selective Dissemination of Information" (Augustes Musana). Part 2 contains a report on the three training courses (Augustes Musana), listing summary proposals and recommendations for Kenya, Tanzania, Uganda, Ethiopia, Sudan, and Djibouti. (Contains 60 references.) (SLD)

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TO THE EDUCATIONAL RESOURCES
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Augustes Musana and Lutz Hüttemann
(Editors)

INFORMATION RESOURCE SHARING AND NETWORKING

(2nd revised and amended edition)

Report on three Training Courses held in
Arusha 22 Oct. - 2 Nov. 1990
Mombasa 15 - 26 April 1991
Arusha 23 March - 3 April 1992

Bonn and Arusha, May 1993

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INFORMATION RESOURCE SHARING AND NETWORKING

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Lutz Hüttemann

INTRODUCTION

During the period 1989 to 1992, the German Foundation for International Development (DSE) has organized a series of seminars and training courses for Eastern African countries, together with national and regional partner institutions, with the aim of assisting them in the provision of improved information and documentation services.

The series of programmes comprised of three national seminars, namely "Establishment of a National Information and Documentation Network in Tanzania" held in Dar es Salaam in February 1989, "Development of a National Information and Documentation Network for Uganda" held in Kampala in March 1990, and "Coordination of Information Systems and Services in Kenya" held in Nairobi in November 1990, and of three training courses on "Management of Information Resources Sharing and Networking". This particular document combines the publication of selected papers and lecture notes by various resource persons of the training courses with the publication of the report on the same courses by Augustes Musana, who directed all three of them. The reports of the national seminars have been published separately. The three training courses have been attended by 24 librarians and documentalists (Arusha, October 1990) from Tanzania and Uganda, by 26 participants (Mombasa, April 1991) from Kenya, and by another 26 information specialists (Arusha, March 1992) from Ethiopia, Sudan and Djibouti.

This publication aims at providing selected writings by the resource persons of the training courses to a wider audience for self-study purposes. It is hoped that it will reach many librarians, documentalists, archivists and information specialists in Eastern and Southern African countries and beyond that region who are interested in the topic of the management of resources sharing and networking among institutions. It is also hoped that some of the ideas presented in the papers are of benefit to library and information establishments which are striving for an improvement of services to their user clientele.

Bonn, April 1993

James M. Ng'ang'a:

A NATIONAL INFORMATION SERVICE

Introduction

During a national seminar titled "Co-ordination of Information Systems and Services in Kenya" held in Nairobi in October - November 1990, participants noted the need for co-ordination of information systems and services in Kenya. An Ad-hoc Committee was formed to follow up recommendations made so that we may be able to achieve the desired goal. What are these systems and services that we wish to co-ordinate? Why is there need for co-ordination? The purpose of this training workshop is to bring senior professionals together to continue the study of issues posed by the above questions and hopefully emerge with concrete plans of action.

In addition to this training course, the Ad-hoc Committee has appointed three sub-committees to study and make recommendations on such areas as:

- Information policy formulation;
- Professional manpower training and education; and
- Resource sharing.

The recommendations you make at the end of the course will be incorporated with those made by the sub-committees. As you are aware, it is governments hope, as envisaged in the 6th National Development Plan, that Kenya will emerge with a national policy on Information and Informatics. My role in this lecture is to try and answer the first question relating to systems and services and to focus on the state it is at the moment.

I wish to draw your attention to a fair number of issues and questions posed by the Minister for Culture, Hon. James Njiru, in his opening speech to the seminar and I quote: "... If information systems and services in Kenya are to be co-ordinated and promoted at all, there is need to properly organize and manage our information resources for effective utilization and a need to seek legal legislation for a national information policy". "... On examining the development of information systems and services in this country, we find that it has been haphazard and un-coordinated. Many libraries and documentation centres in the government departments and parastatals are inadequately funded and staffed."

He further posed some questions which we need to address ourselves to, namely: "What do the information professionals intend to do in order to assist the government in its present task of improving the economy in order to curb the inflation and create employment?" "What role have the information systems and their services played in ensuring that the relevant information reach the peasant farmer, commercial farmer and Jua Kali artisan in order to enhance the diversification of the economy through agricultural and industrial development?" "...are government leaders equipped with adequate information provided by professionals on which to base sound policy and decisions...?

Information

The concept of information as a national resource for social-economic development is now widely accepted. Access to information is one of basic human rights. Indeed, as was emphasized during the sixth special session of United Nations: "Access to information must be a major feature in the improvement of the quality of life for each individual as much as he needs to have it available." It is however true that although information is a vital human resource, most of it is not available to users at the time they need it. It is for this reason that we need to look at our national information systems and the services we provide as to see what can be done to improve accessability to information by Kenyans wherever they are when they need it and the amount they need. Therefore, we need to look critically at our acquisition, organization, storage and utilization policies.

As we think about these issues, let us bear in mind Unesco's objectives. These set out action required in setting up a national information system and service which is geared to meet the developmental needs of society, namely:

- Planning an organisational structure to co-ordinate services for maximum use;
- Passing the necessary legislation;
- Introduction of the necessary technology;
- Making proper financial provision.

National Information System

A national information system comprises of various components, namely, the nations libraries, archives, record centres and documentation centres. However, for this system to function effectively it needs to be supported by other agencies which deal with generation, enumeration, production, transfer and distribution of information such as publishing, and book trade industry; statistical bureaux; telecommunication, informatics and mass media. Such a system does exist in Kenya but at different levels of development. Similarly the services they provide are also at various levels of effectiveness depending on which system one uses.

National Library System

A national library system consists of National, Academic, Public, Special and School Libraries. Each type of these libraries performs clearly defined functions and provides services geared towards meeting needs of users for whom the library has been established. Libraries of all types and sizes from very small ones with a book stock of less than 300 copies to large academic and public ones exist in Kenya. It is estimated that excluding school libraries the number of libraries could be between 300 and 1000 with a total book stock in excess of 3 million copies. All libraries irrespective of size face similar problem albeit at different levels of severity. These problems include:

- Lack of adequate funds for purchase of publications

- Inadequate professional human resources
- Inadequate physical infrastructure
- Inadequate use of information technology
- Lack of well defined inter-library co-operation
- Lack of an all-embracing national policy on provision of information.

Suffice it to add that the Government having recognized the importance of a well developed organized and fully equipped information system as a tool for socio-economic development, it is taking corrective action to rectify these shortages.

The National Library

A national library of a country is the principal most comprehensive library. It acquires through legal deposit all publications published in the country and about the country and preserves them for posterity. Among other things it provides reference service; produces the national bibliography, and generally provides leadership to the profession and the nation's libraries. It may also be required to provide lending services or take active part in document delivery through such services as interlending, photocopy services, translations; research and development and general publishing. Kenya does not have such a library but some functions such as acquisition material through legal deposit, and production of the national bibliography are performed to certain degrees by KNLS, Kenya National Archives and the University of Nairobi library.

Academic Libraries

Academic libraries serve institutions of higher learning, namely universities, colleges and polytechnics. The purpose of all academic libraries is to support teaching, learning and research activities of the parent institution. Kenya has a sizeable number of academic libraries serving:

- Universities and their campuses
- Constituent colleges
- Diploma teachers colleges
- Primary teachers colleges
- Technical colleges.

There are also several private universities whose libraries must be of an acceptable standard before such institution can be permitted to offer degree programmes.

The academic libraries have large collections, have the lion's share of qualified human resources; some have good library buildings and generally are well provided with equipment. A major criticism of academic libraries is that their services are provided to members of respective universities. But let us not lose sight to the fact that the libraries have been established to meet information needs of these groups of users. It should however be pointed out that no serious user is turned away.

In addition to normal library services, academic libraries also offer such services as binding, photocopying etc. Kenyatta University in addition offers information service to visually impaired users. A braille and talking production centre is being established.

Public Libraries

These are usually supported by public funds to provide free library service to the citizens. Public libraries in Kenya include:

1. Nairobi City Public Libraries at Macmillan Memorial Library and 2 branches at Kaloleni and Eastlands supported by the Nairobi City Commission. Due to financial constraints users have to pay a subscription to use these libraries.

2. The Kenya National Library Services (KNLS). Established by an Act of Parliament to provide public library service to the whole

country. The service now consists of the Nairobi branch at Headquarters, provincial and district libraries now numbering 15. The provincial libraries serve the hinterland around them through mobile library service.

The Act establishing the KNLS Board allocates a wide range of functions to KNLS, namely:

- To promote, establish, equip, manage, maintain, and develop libraries in Kenya as a national library service;
- To plan and co-ordinate library documentation and related service in Kenya;
- To advise the government, local authorities and other public bodies on all matters relating to library, documentation and related services;
- To provide facilities for study and for the training in principles, procedures and techniques of librarianship and such other related subjects as the Board may be from time to time decide;
- To advice the government on library education and training;
- To participate and assist in campaign for eradication of illiteracy;
- To stimulate public interest in books & to promote reading for knowledge, information and enjoyment;
- To acquire books produced in and outside Kenya and such other materials and sources of knowledge necessary for a comprehensive national library;
- To publish the National Bibliography of Kenya and to provide bibliographical and reference service.

It is unlikely that as presently constituted, KNLS will be able to perform all these functions effectively. Suffice to add that KNLS has managed to start production of the Kenya National Bibliography and has produced issues covering 1980 to 1985. Although KNLS is supposed to act as a national reference and bibliographic centre, it faces certain constraints such as inadequate funding and inadequate professional human resources as a result of which the services are not comprehensive. The legal deposit law is not comprehensive and therefore a lot of useful publications such as those published by government are not deposited. This deficience has recently been rectified by the amendment of the Public Archives Act 1990 and the establishment of the National Documentation Service at the Kenya National Archives.

Special Libraries

These serve specific subject fields and generally display some or all of the following:

- They operate in one more or less clearly defined field or area of activity e.g. agricultural research;

- They are set up by a parent organization which is upon that activity;

- They therefore acquire, house, arrange and exploit on behalf of their users information containing material pertinent to that field and its peripheral areas;

- They give an information service to their users which necessarily goes beyond the traditional lending such as abstracting, indexing, circulation of journal, articles etc.

Special libraries are mainly owned by Government Ministries and Parastatals or Research Institutes or Professional and Learned Societies or Commercial and Industrial Organizations. Due to the nature of work done in special libraries staff see themselves as documentalists or information scientists rather than as librarians.

Kenya has a large number of special libraries serving institutions mentioned above as well as international organizations. The effectiveness of services provided varies widely. Those serving research institutes and international organizations are usually well provided with the necessary resources. Indeed most of them are leading in the computerisation and use of information technology.

School Libraries

These serve primary and secondary schools. Several secondary schools have some kind of libraries. It is now agreed that school libraries are essential and should be developed to support the education system.

Archives and Record Centres

These house and preserve for posterity and research records of governments or institutions. In Kenya, the Kenya National Archives (KNA) houses the nation's archival records. KNA established by the Public Archives Act 1965 has achieved recognition nationally, regionally and internationally. The recent amendments to the Act and establishment of the National Documentation Service has given KNA a co-ordinating role within the public service.

Documentation Centres and Services

There are presently three documentation centres in Kenya, namely:

1. Kenya Agricultural Documentation Centre (KADOC) located in the Ministry of Agriculture. Its major service is the production of the Kenya Agricultural Abstracts.

2. Kenya Scientific Information & Documentation Centre (KENSIDOC) of National Council for Science and Technology. When fully established, KENSIDOC will be able to provide a variety of documentation services in science and technology information.

3. District Information and Documentation Centres (DIDC's), being established under the Ministry of National Development & Planning with objectives of providing development information to District Development Committees.

Kenyatta University library indexes comprehensively all local newspapers. Currently only an "Education Index" is annually published. It is hoped that this indexing service will be computerized in near future.

Resource Sharing

At the moment this is done on a gentleman's agreement. There are several problems which make the service ineffective, chief of which are:

- Lack of information on available resources;
- Lack of clearly defined inter-library co-operation policy;
- Lack of adequate resources for sharing;
- Institutional policies sometimes militate against resource sharing;
- Unwillingness to co-operate by those who manage these institutions.

Education And Training

Shortage of qualified human resources has been identified as a major problem hindering the development of information services in Kenya. This has been due to lack of training facilities in Kenya except for the certificate level. To alleviate this problem the Government has established a Faculty of Information Science at Moi University, a Department of Library and Information Studies at Kenyatta University and a Diploma course in librarianship at Kenya Polytechnic.

A new curriculum for certificate and diploma courses is under preparation at Kenya Institute of Education. The Ministry of Technical Training and Applied Technology hopes to establish more training facilities when this curriculum is finished. Currently, Moi University is offering a B.Sc. in Information Science while Kenyatta University is offering a Masters Degree in Library Science as a subject to B.ED. students; a B.L.I.S. curriculum is awaiting approval by Senate.

National Information Policy

Although we have mentioned lack of a comprehensive policy as a factor for lack of co-ordination, it should be added that we are not devoid of policies. There does exist several sectoral policies in form of legislation, regulations and guidelines covering for instance public libraries (KNLS Board Act), the archives (the Public Archives Act), the deposit material (The Books and Newspaper Act), Sessional Paper No. 5 of 1982 dealing with Science and Technology Information, and District Focus Circular No. 1/86 on establishment of District Information and Documentation Centres. Other relevant laws include Copyright Act, the Universities Acts, Education Act and Sessional Paper No. 6 of 1988.

The Future

From what I have said above it seems the future is bright. It is Government's hope, as envisaged in the 6th National Development Plan 1989-1993, that a feasibility study intended to form the basis for the development of a broad frame policy regarding the co-ordination and development of information infrastructure will be undertaken, eventually leading to a clearly articulated National Information and Informatics Policy. Among other things it is hoped that the existing legislation will be studied and where necessary amended. Plans are underway to also establish a National Book Development Council.

In this paper we have shown that Kenya has sound information infrastructure that forms a solid base on which a national information policy can be developed. The Government has done its part and I wish to say the ball is now in our court. The question is how do we move from here? In answering this question we should also bear in mind questions raised by Minister Njiru as indicated earlier. But let me say that success will only be achieved if all of us co-operate and work together for the common good of our library users and national development. A formal national policy on co-ordination must be developed.

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James M. Ng'ang'a:

Resource Sharing

What is resource sharing? To many of us, resource sharing is nothing more than library co-operation. But this is not quite true because while a number of activities are same, there is a significant difference. Library co-operation deals mainly with materials and activities including interlibrary loans, exchange of acquisition lists, supply of photocopies etc. While resources sharing assumes a range of physical, intellectual and conceptual resources on one hand and a body of people with library and information needs on the other, and covers the activities involved in organising the one into a set of optimum relationships to meet the needs of the other, it is user oriented and its main activities revolve around improvement of services for users. This includes finding out the users' needs - user studies and education of users. Resource sharing can therefore be defined as the act of two or more libraries working together to agreed standards to achieve common objectives. The basic function of a library is to match the information needs of users with the information content of documents.

Benefits of Resource Sharing

The following are the most important benefits of resource sharing to participating institutions:

- Improves access to material;
- enables co-operating institutions to stretch limited resources;
- allows greater staff specialization;
- improves services to users;
- avoids unnecessary duplication;
- reduces the number of places which will need to go for service;
- improves working relationships between co-operating libraries;
- assists staff to keep up to date.

It should be added that resource sharing does not reduce a library's current costs. It may even increase the cost, but on the whole it will enable the library to provide improved service at a cost much lower than otherwise would be incurred.

Objectives

The following objectives should be achieved by participating institutions when engaging in resource sharing:

- To improve services;
- to enable libraries to take on new services/projects;
- to avoid duplication;
- to develop awareness of what others are doing;
- to know where help can be found;
- to meet organizational or national objectives;
- to improve professional/personal skills.

User Studies

Resource sharing is user oriented rather than material centred. It is an important element in national planning of library and information services to meet the needs for information, education, culture of the whole community. In order to plan a better service, there is need to have reliable information on the size, characteristics and needs of the user population. This can be done through undertaking user studies. It is also necessary to develop user education programmes to prepare users for participation in the library system.

Rationale For Resource Sharing

As indicated earlier the basic function of a library is to provide users with access to information which they require. It is however, not possible for any library to have all the material its users need due to:

- Information explosion;
- cost of needed material;
- advance of modern technology;
- wide disparity between resources available to individuals;
- increased users needs;
- inadequate budgetary resources;
- shortage of information generally;
- critical shortage of information in developing countries;
- lack of relevant information.

Aspects of Information Resource Sharing

The most obvious form of resource sharing is library material. This is done through several ways such as:

- Improvement of collection through co-operative collection development;
- Exchange of material;
- Inter-library lending;
- Inter-institute document delivery;
- Creation and production of guides such as union lists of periodicals, union catalogues, and bibliographic utilities;
- Storage of material;
- Cataloguing and classification;
- Photocopying services;
- Abstracting and indexing services;
- Microform production;
- Staff training and utilization;
- Binding;
- Conservation and preservation of material.

Barriers to Co-operation

There are several barriers to co-operative activities. They can be divided into eight broad categories:

- Desire for local self-sufficiency

- Size and status of libraries
- Technological sufficiency
- Psychological reasons
- Experience resp. lack of experience in resource sharing
- Traditional/historical reasons
- Physical and geographical reasons
- Legal, political and administrative reasons.

Conditions for Success

Libraries attempting to participate in resource sharing must indicate their willingness to co-operate, must provide information on available resources, should aim to establish an effective communication system, and must possess adequate bibliographic tools. They must answer the following question: standardization of who is doing what? for what purpose? by when? If these conditions are fulfilled, then the process of resource sharing will be successful.

Planning Of Resources Sharing

When resource sharing is agreed upon by participating institutions, then the following aspects must be properly planned:

- Identify and locate major collections, sources and materials;
- Collate, publish and distribute collective information for all participating bodies;
- Workout basis of sharing, reference services, lending services, copying services, access to material, delivery services, and lists of holdings;
- Establish means of sharing ideas, development and problems in the form of a newsletter;
- Plan for new developments in the knowledge of what others are doing.

What To Avoid

The following points give an indication of what should be avoided when engaging in resource sharing:

- Do not think of the co-operative as a supplementary and something it is possible to do without;
- Planners must not forget to spend time working out operational details;
- The system will not work without causing major operational changes in the member libraries;
- Do not think of the system as something for nothing for the library;
- Do not have the co-operative funding and operation handled by one or more member libraries, but by an independent body.

Resource Sharing In Kenya

Attempts to foster resource sharing in Kenya have been made since early 1960s but nearly 30 years later there is still no formalised system. Informal co-operation does exist on what is known as gentleman's agreement, in areas of inter-library lending, exchange of material; exchange of ideas. Problems still exist that hinder development of formalised co-operation. These are:

1. Lack of information on available resources;
2. Unwillingness to co-operate;
3. Lack of effective machinery that can bring librarians together;
4. Distances and communication;
5. Lack of comprehensive National Information Policy;
6. Copyright restrictions;
7. Lack of co-ordinating authority; and
8. Inadequate resources.

Where Do We Go From Here

Of the above problems, I think the most important one is lack of comprehensive National Information Policy. It seems to me therefore that formulating such a policy should be our first step. The policy would cover all aspects of information generation, acquisition, organization, storage, dissemination and utilization. It should also cover manpower development, users, information services, application of information technology, and funding.

Secondly, a co-ordinating body should be established to work out the modalities of operations and set up standards.

Thirdly, production of literature guides such as union catalogues, union lists of periodicals, directories, bibliographies etc. should be undertaken. Use of information technology in this area will greatly improve an information availability and accessibility.

In conclusion let me say that our hope in meeting users information needs to the full lies with acceptance, and implementation of a resource sharing programme; and the time to do that is now.

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NETWORKS: AN OVERVIEW

Definitions

Network: Any kind of formal cooperative arrangement where people agree to exchange information or resources. There are two basic types of library networks, firstly the traditional: One built upon agreements to allow free access to information via interlibrary loan. Joint acquisition policies and cooperative bibliographic control - union lists, cataloguing in formal meetings etc., and secondly the modern: based upon the modern electronic systems which link libraries for fast access to resources. In Information Technology this has been described as a convergence of computer technology and telecommunications.

Cooperation: Cooperation is an effective means of pooling and sharing resources. It is the notion of working together to achieve some common end. This means that there must be a deliberate attempt to improve access to library materials through joint action. Networking can only be possible through cooperation.

Coordination: Bringing together of different libraries and information systems into some form of relationship. It involves the creation of a relationship to the existing information system but taking overall responsibility for the establishment of the national network.

Attributes for an Information Network

1. It must bring together information resources to accomplish results beyond the ability of one of its members.

2. It must design a structure that allows individual institutions to benefit from the macrosystem.

3. It must have a formal organization which would cater for fiscal, legal planning and policy formulation.

4. A central bibliographic record that would assist in locating needed items within the network.

5. Identify the levels of service that would meet the basic needs of users.

6. Cater for collaborative development of resources eg. cooperative acquisition.

7. Training to users and system operators.

8. Provide a communication system. The participants must be able to send and receive messages.

One may add the need to use information technology to enhance greater processing power, greater storage capacity, faster retrieval services, and lower cost.

Interlending

For effective national access to publications the publications must be acquired by one or more libraries and there must be an efficient system for identifying their whereabouts and obtaining. A well designed network of interlending is of little value if the actual documents are not available. An information network must facilitate interlending. The following are criteria for interlending systems:

- The first is the supply/satisfaction rate: the proportion of wanted items that can be obtained. The volume of demand is to some extent a function of the supply system.

- Speed of supply. A system that achieves a high supply rate is likely to be used more heavily.

- Cost. All costs including the cost of constructing and maintaining union catalogues, staff costs and stationery postage.

Other aspects of interlending are described in the following paragraphs:

- Distance is almost irrelevant to the speed of supply. Most of the delays in interlibrary lending occur not in transit but in requesting and supplying libraries.

- A high proportion of demand is for limited range of items that are held by many libraries and receive heavy use locally. This means that libraries that possess requested items may be unable and unwilling to supply many of them.

- Interlibrary borrowing is not cheap and it is never free.

Models of Interlending Systems

The following models of interlending systems are based on the degree of centralization or concentration:

Decentralization: Involves access to the holdings of a wide range of libraries by means of union catalogues or direct contact between libraries. No complicated mechanisms are required. In union catalogues: libraries have to submit catalogue entries to them, a centre has to interfile large numbers of entries based on different cataloguing rule. But union catalogues may never be up to date and publication is costly. If they are not published all requests have to go to a centre to be checked and then sent on to libraries listed as holding the items. This is slow and costly. Requests have to be distributed among numerous libraries which may vary in their loan periodicals. The first responsibility of local libraries is to their own clients not to other libraries, their systems are geared to local service and not interlibrary loan. It is possible that a request is not eventually satisfied because no library in the country has bought the items in question. Either libraries must spend money to acquire documents that their clients do not need or develop a separate collection.

Partial Concentration: The deficiencies of decentralisation are due to the number of libraries involved. This involves a limited number of libraries designated and identified as having strong collections in certain fields. The libraries so designated can act as specialist libraries for research institutions or universities with special subject interests and to serve local and national requests. Such libraries could receive Government funds to develop their collections in the national interest. The problem with this is that subjects boundaries are never clear-cut and if changes are introduced, it affects the whole system. Union catalogues are still necessary and there is a danger of conflict between needs of local clients and interlibrary loan demands.

Concentration On Interlending: Interlending demand can be placed on two or three major libraries that between them may contain the majority of titles. Such a concentration of holdings is practised in Denmark. Acquisitions could easily be extended and the libraries would adapt their procedures to service interlending needs. To reduce competition between the needs of local clients and others it would be necessary to duplicate some titles. The service given by these libraries should be paid for.

Centralization: This has some advantages in that it can design all operations specifically for interlending and it is simple for libraries to use since in theory libraries send all their requests to one place. But centralization can be wasteful particularly if many of the items are held by other libraries.

Networks For Library Application

Wide area network (WAN): This describes traditional telecommunications facilities such as public switched telephone network, leased data lines, etc. It is used in libraries for online searching, ILL requests, and library automation.

Local area network (LAN): This connects computers and peripherals at high speed. They use technology and connection media that are not available on the public switched network. The fast speeds allow large amounts of information to be transmitted.

This can be used to create databases, access databases, download information and word processing.

Subject Networks

Medicine: Medical Literature Analysis and retrieval service. NOW MEDLINE (NLM administered) covers three thousand medical and biochemical journals and gives about 20,000 references per month.

Agriculture and food sciences: AGRIS - International Information Systems for agricultural sciences and technology administered by FAO. Information disseminated in form of magnetic taps and a printed index Agrindex. AGLINET - Worldwide cooperative interlending system of agricultural libraries. Commonwealth Agricultural Bureaux (CAB) provides world wide information service from selected sources. The database is used to produce 25 major abstract journals and provide batch and online searching services. It produces FOOD science and technology abstracts, the printed output of the service.

Environmental Science: INFOTERRA - The international referral service for environmental information sources involving 108 countries operating through a world centre in Nairobi. Each country identifies organizations within its boundaries which are sources of environmental information and transmits the information to NRB where it is beamed by satellite to a computer in Geneva. The output forms the International Directory of Information sources issued to national focal points twice yearly. INFOTERRA does not itself create a database since there are already many in that field.

Education: ERIC - Education Resources Information Centre - sponsored by US National Institute of Education Washington DC. ERIC has got a number of clearing houses which search out documents and the materials are screened, abstracted and indexed and inputted to the ERIC Computer database. ERIC products include: Resources in Education (RIE) for non-journal literature, Current Index to journals, Topical bibliographies, and Literature reviews.

Referral Networks: Facilities set up for collecting and disseminating reliable data on all kinds of information sources. The primary purpose is to improve the use of existing resources and not to compete with them and hence it does not provide answers to enquiries but acts as an intermediary directing the enquirers to suitable sources of specialist information - The source may be libraries, organizations or individuals from whom authoritative information can be obtained. They provide a single central point of access to the nations technical information.

Information Brokers: The use which many organizations may wish to make of online search systems may not be great enough to justify a full scale installation within the organization and many have begin to rely on external intermediaries - Information brokers. There are many types of brokers - public, university and research libraries etc.

Document Delivery Systems: Most of the networks provide fast access to bibliographical references but the delivery of the full text to the user through interlending and postal system is delayed. As a means of speeding up delivery many host services have introduced an on-line ordering facility which enables requests to be placed for documents at the same time as the references are retrieved from the system. This may reduce the time needed to order but do not shorten the delivery time. A study done for the Commission of European Communities indicates that it is technically and economically feasible to create a European system capable of delivering full text overnight at a marginal cost per page compaired with existing charges made by interlending systems. The system proposed is called ARTEMIS (Automatic Retrieval of Text from Europe's Multinational Information Service) would convert a document to a computer readable form and stored in a database available to the host computer from where it can be retrieved in response to a request.

James M. Ng'ang'a:

BIBLIOGRAPHIC CONTROL

Introduction

The literature on and about Kenya is varied and vast. It covers many different subjects. Most of these publications are issued by many organisations such as commercial publishers, government ministries, departments, parastatals, research institutes, professional associations, universities etc. With such diversity of material, easy access to required literature by users, researchers etc. is not possible. There is need therefore to develop means of control. Such control is commonly known as Bibliographic Control. This is a term which has been variously defined but conveys the idea of a goal which has proved to be tantilizingly elusive. It implies ability to assure complete supremacy over the information problem. A number of definitions have been advanced. A.J. Walford defines the term thus: "Bibliographical control may be defined as keeping abreast of the literature, whatever its form - books, pamphlets, manuscripts, reports, theses, periodical articles etc. The means of control being bibliographies of all kinds, accessibility to collection of material and ability to reproduce text, not to mention recent media as data banks. Organization of acquisition on a national scale and state of art surveys are indispensible to a complete apparatus of control".

Donald Davidson in his book "Bibliographic Control" gives the following definitions: "Bibliographic Control is the development and maintenance of a system of adequate recording of all forms of material published and unpublished, printed, audio-visual or otherwise which add up to the sum total of human knowledge and information. Bibliographic Control is defined to mean mastery over written and published records which is provided by and for purposes of bibliography. Bibliographical control is synonymous with effective access to the literature through bibliographies. Bibliographic organisation may be defined as the pattern of effective arrangements which results from the systematic listing of the records of human communication."

Thus on the basis of these definitions bibliographic control is revealed as a series of operations which are intended to create effective listings of the various sources of information. Bibliographies facilitate communication through formal channels. Access to such communication reduces duplication in research and discovery.

Role Of Bibliographies

Bibliography is the scientific record of books. Although it is almost similar to the library catalogue, its purpose goes beyond that of the catalogue because while the catalogue is a record of books in the library, the bibliography is an index and guide to all books ever written. It is therefore key to the learning and the literature of all ages and countries. It prevents waste in research and checks useless production. It also helps to indicate the gaps in literature.

Bibliographies are the foundation of any library collection development and resource sharing. Bibliographic control can therefore be an important activity within the national information system.

Types Of Bibliographies

National Bibliographies: Most countries with significant publishing programmes attempt to list and describe the publications they produce. This listing results with a national bibliography. National bibliographies are both current and retrospective. A current national bibliography is a mirror that reflects the culture, character and current interests of a country by listing its publishing output. Not only does it serve as a historical recorder, but when distributed to other countries it serves as a window to that country. For the librarians and bibliographers, current national bibliography serves as a reference source, a verification tool, and an acquisition tool for collection development. For scholars and researchers, it helps to identify new publications in their subject fields, and to the government officials and the general public, it helps to identify changes in policies, politics and current trends. Works such as books in print, though not strictly national bibliographies are useful in informing the searchers of the current availability of publications.

Subject Bibliographies: Most of them cover subjects like health, agriculture, etc. on national, regional or international level.

Library Catalogues: Catalogues list the works possessed by an institution or group of institutions. The catalogues of the Library of Congress are very comprehensive.

Periodical Literature: Most literature searching for research purposes concentrate upon the journal literature. Control of this literature is undertaken by bibliographical services specializing in listing and describing the contents of journals i.e. abstracting and indexing services. Newspapers are however not very effectively covered.

Theses and research: Much completed research is published in form of theses or dissertations presented for higher degrees at universities. In most cases, respective universities communicate information about them by listing such theses in annual reports or other publications such as the Library's accession lists. In some countries, e.g. the U.K., the communication is better organised. Such work as the "index to theses accepted for higher degrees by universities of Great Britain and Ireland and Council for Higher Academic Awards" is a comprehensive source. Not all research is undertaken for degree purposes. As a result with increased research activities, a body report literature has been created which has in turn created the problem of controlling and exploiting this form of literature. A number of research institutes list with their annual reports, the titles of research in progress and those completed.

Conference Proceedings: A lot of information is passed at conferences and meetings throughout the world. There is need to control this mode of communication.

National and International Efforts

UNESCO and IFLA have been in the forefront in the area of bibliographical control and championed the concept of Universal Bibliographic Control (UBC). The 1977 Paris International Congress on National Bibliographies (ICNB) endorsed the concept of UBC as a long-term programme for the development of a world-wide system for the control and exchange of bibliographic information and emphasised the need to strengthen the national bibliographic control as a prerequisite for universal bibliographic control. The Congress recognised the importance of the national bibliography as a major instrument in ensuring national bibliographic control. The ICNB came up with recommendations covering the following areas:

- Legal deposit;
- Selection of material for the National Bibliography;
- Presentation and frequency of printed national bibliography;
- Catalogue cards;
- Contents of the bibliographic record;
- Publications of inter-governmental and inter-national NGO's;
- Information systems;
- The international serials data system (ISDS);
- Resource sharing.

The purpose of the universal bibliographic control system is to make universally and promptly available, in the form which is internationally acceptable, basic bibliographic data on all publications issued in all countries. The concept of UBC presupposes the creation of a network made up of component national parts each of which covers a wide range of publishing and library activities all integrated at international level to form the total system. At the national level, the operation of the system requires that:

- The means of ensuring that it is possible to make the bibliographic record of each new publication as it is issued (i.e. legal deposit or other enabling legislation;

- The machinery by which that bibliographic record can be made (i.e. the establishment of a national bibliographic agency).

For this concept to succeed, all agencies must accept common standards in creating the bibliographic record. The principle of sharing and exchange of bibliographic records so produced, underlying this principle is the implication that the national libraries sharing their records will offer them in a standard format.

Development of Bibliographic Activities in Africa

Concern about accessibility of material on Africa especially those published in African countries has been felt for a long time particularly by scholars engaged in African studies. This led to the being held of the International Conference on African Bibliography in Nairobi, 4-8 December 1967. The Conference addressed itself to all areas that need to be dealt with if a country is to be able to have a mastery of its literature. These areas covered:

1. National bibliographies

1.1 Bibliographic writing works concerned with African countries
1.2 Bibliographies of writings on Africa produced outside Africa

2. Subject bibliographies

3. Current bibliography and automation

4. Classification and cataloguing

5. Bibliographical control of special types of material

5.1 Government publications
5.2 Work in progress
5.3 Manuscripts and archives
5.4 Microforms
5.5 Ephemeral materials

6. Acquisition of Africana material

7. International co-ordination of bibliographical services.

The conference came up with 23 recommendations. Some of these have been implemented to some extent in African countries. It is however true that bibliographical control in African countries is still at infancy stage. The main reason for this situation is that most countries lack the necessary infrastructure such as the National Library, legal deposit, qualified manpower, and equipment which are essential for compilation and production of bibliographies.

Bibliographical Control in Kenya

Since the 1967 Conference, there has been some bibliographic activities in Kenya some of which covered East African region. The main activity has been centred around the Library of Congress Office which collects publications from the Eastern and Southern African region, catalogues then issues Accession Lists bi-monthly and an annual serials supplement.

At the national level efforts to set up a national bibliographic agency were initiated in Mid-seventies culminating in the establishment of the National Reference and Bibliographic Department at Kenya National Library Services in 1980. The Department was charged with the responsibility of producing the Kenya National Bibliography (KLB) - both current and reprospective and to provide bibliographical and reference services.

The National Bibliographic Agency has so far been able to produce annual issues of Kenya National Bibliography covering 1980 to 1985. Writings up to 1989 have been compiled and are awaiting production.

The principal objective of KLB is to record comprehensively and accurately the bibliographic data on all the books, research reports, conference proceedings, pamphlets, maps, current serial titles and non-print material published in Kenya and includes foreign published works of interest to Kenya. The bibliography is classified using Dewey Decimal Classification and materials are catalogued by AACR II.

The Books and Newspapers Act 1962 as amended in 1987, requires all publishers to deposit directly at their own cost, two copies of books published by them to the Director, Kenya National Library Services. The 1990 Amendment and the Public Archives Act requires all Ministries, departments and parastatals to deposit with the Director, Kenya National Archives, 2 copies of all published and unpublished material. The Director is in turn expected to issue twice a year an accession list of such material. When these acts are fully implemented Kenya should be on the way to mastering its bibliographic control.

University of Nairobi Library has issued a bibliography of theses and dissertations presented for higher degrees to the university since 1970 to 1979. A supplement covering 1980 to 1985 was issued a few years ago, and a second supplement covering the period since 1986 is under preparation. An international bibliography covering theses and dissertations by J. M. Ng'ang'a covering nearly a hundred years to 1980 was published in 1983.

There are two major abstracting and indexing services, namely the Kenya Agricultural Abstracts (current and retrospective) produced by the Kenya Agricultural Documentation Centre (KADOC) and Newspaper Indexing Service at Kenyatta University. This service covers Education, Social Sciences, Humanities, Science and Technology and Presidential speeches. The Education Index is published annually. An index of the Presidential Speeches is issued at irregular intervals. So far two issues have been produced covering the period 1978 to 1988. A major retrospective index is "Kenya: a subject index, 1967-1977: a select bibliography", 1983 by James M. Ng'ang'a. A supplement covering the period 1978 to 1990 is under preparation.

Conclusion

I think it would be safe to conclude that kenya has made substantial progress in its efforts to master its bibliographical control. But much remains to be done for complete mastering. There are a number of problems that hamper achievement of this goal and there is need for us to address ourselves to them. These include:

1. Shortage of professionally qualified manpower;
2. Inadequate funds;
3. Depository laws;
4. The state of publishing industry;
5. Lack of necessary equipment including computers;
6. Lack of meaningful library co-operation.

The prospects for the future are however bright. Suffice it to add that it is not useful to a user to know a document exists if he cannot get hold of it. It is therefore important to ensure availability of material cited in the national bibliography.

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COLLECTION DEVELOPMENT

Introduction

Libraries and documentation centres exist to serve the needs of their own community of users. Thus, their purpose is to provide the user with the information he needs, in a usable form at the time he needs it. The library or documentation centre also ensures that material for which there is known demand or which is likely to be required at short notice is either in the library or easily obtainable from other sources.

The size, nature and content of a library collection depends upon the objectives the library is expected to achieve and the needs of its users. A collection development officer should be familiar with the objectives and the mission of the organisation his library is expected to serve. For instance in case of a University, the users are well defined in the statutes and their information needs relate to the University's main functions of teaching and research. The purpose of a University library is the acquisition of relevant learning material to meet the teaching, learning and research activities of the University.

Simply defined, collection development is the act of building collections by the careful and correct selection of current and retrospective books, non-book material and serials to support the present and anticipated information needs of users of the particular institution. The development is planned and systematic and includes evaluation of the collection as it now exists, the replacement of worn out or lost but useful material and continuing process of surveying the collection to determine new fields to be developed.

Requirements

Effective collection development requires considerable knowledge and skill. The selectors must be familiar with the literature of the subjects for which they are responsible. They should also be well acquainted with the state of the library's holdings, and they should be knowledgeable about the activities of the parent organisation. They should know their user's needs.

The staff must be well qualified. The work of such selectors should be co-ordinated by a collection development officer who is answerable to the library management. Among other things, his functions should include:

- co-ordination of the work of subject specialists (selectors);
- evaluation of the collection;
- formulation of collection development policies;
- liaison with users;
- monitoring institutional mission changes.

In the process of building a collection, a collection developer should survey/evaluate the collection for which he is responsible while at the same time he initiates a system for the current acquisition material within his area of responsibility and later on deal with retrospective titles. This is necessary to avoid missing useful current titles. To survey/evaluate a collection one should:

- check around the stock to get a general idea about present holdings;

- survey through bibliographical resources and literature guides on the subject;

- study the shelf-list located in the cataloguing hall.

The shelf-list will give a better picture of the scope and depth of the collection being surveyed. Should note strengths and weaknesses and keep a title count. The collection developer should identify basic selection bibliographic tools for current and retrospective title. In our case these should include:

Current: Kenya National Bibliography (KNB); British National Bibliography (BNB); Cumulative Book Index; Library of Congress Accessions Lists; National Bibliographies from Eastern and Southern African Region; and Accession lists of major libraries etc. Publishing Catalogues.

Retrospective: National and trade bibliographies; Library catalogues; Reprint catalogues; Books in Print Listings; Bibliographies of bibliographies; and Research and reference guides of users.

Selection

The ultimate goal of selection is to choose from among the many available resources of knowledge those that will serve best the needs of the library's user community. The practice of selection must continue as long as the library exists. The selection must cope with changes both in material formats and users' needs. The basic goals of management of selection is to provide the process which will function continuously and within any given time and budget limitations.

An effective collection development should be supported by adequate funding. Inadequate funding results in gaps.

Preservation and conservation of material is a continuous process in collection development and has a wide implication on the allocation of funds. Methods of conservation include binding, book production, education of information works in this area.

Vandalism and theft are common problems in libraries. Efforts must be made to curb these negative practices through installation of security detection systems, user education, imposition of stiff penalties, and mounting exhibitions of mutilated and vandarized books.

Collection developers should be aware of new technological development and its impact. For an effective collection development an acquisition policy is essential. It should cover all aspects of work such as:

- selection (including basic principles and limits of selection);
- preservation and conservation;
- funding;
- resource sharing;
- application of information technology;
- gifts.

Such a policy should be written.

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INFORMATION MANAGEMENT - INDEXING

Document Analysis

A document is any data carrier which carries information about a specific subject being of potential use for the users of a particular documentation system. The major purpose of documentation is to describe such documents in a way that they are retrievable not only according to the formal characteristics but mainly according to their contents, that means the information the documents carry, therefore in contrast to bibliographic description. We consider document description to be composed out of two main aspects: Formal description (partly identical with bibliographic description), and contentual description (description of the contents). By this kind of description a substitute of the document will be established which from then on is the object of documentary activity.

To provide a retrievable contentual description of a document the document has to be analyzed in several stages:

(a) Are there indications that the document as a whole might be relevant for the respective documentation agency (general relevance analysis)?.

(b) If so, the document then has to be understood by the person analyzing it, that means it has to be read and the meaning has to be reconstructed (meaning analysis).

(c) After having understood the document a second relevance analysis follows (is the document still relevant for the purpose of the documentation agency)?.

(d) If so these contentual elements which are worthy to be stored and retrieved if asked for, have to be selected. There are several criteria for selecting contentual elements e.g.:

- Novelty;
- Comprehensiveness;
- Confirmation and repetition;
- Dissonances to previous findings;
- States of author.

(e) Afterwards the selected contentual elements have to be designated in an appropriate way that they later on may be retrieved (indexing). The general process may be seen as one language / concept-conversion. Basic terms are:

- Concepts are the units of thinking;
- Terms are physically receivable representations of concepts;
- Signs are signals representing something else usually concepts;
- Language is a system of signs to express processes of thinking.

Considering this background the following basic language concept-conversion take place in the whole of documentary communication:

1. The author of a document first thinks (concept 1) and then transforms his thinking into language (term 1).

2. The documentalist has to read the document (term 1) and to retranslate it into his own thinking (concept 2).

3. Then he has to allocate terms (2) to the concept (2) which he thinks are the best.

4. Usually in documentation systems there are at least some conventions about term usage. Therefore the individual terms (2) have to be converted into the conversational terms (3).

5. On their side the user first thinks (concepts 3) and then transforms his thinking into language, e.g. a request (terms 4).

6. The documentalist who is asked to answer a request then has to understand the question that means has to retranslate the question into concepts (4).

7. He then has to translate his understanding into the conventional terms (5).

8. Finally the terms (5) are matched in the storage against the stored terms (3). If they match it is assumed that the document described by these terms matches the user needs or interests. This process would not be complicated if all person participating in the process would not be using natural language - that means the languages we use for everyday communication. Such languages have some disadvantages as far as the role mentioned process is concerned, e.g. they have synonyms (different words for same concepts), quasi-synonyms (different words for overlapping concepts where the words often are used exchangeable in some contexts), and expressions which have different forms but same meanings.

These equivocalities require some kind of control mechanism between all languages and language users taking part in the above mentioned process. Such control devices are now widely called "documentary languages". They have some characteristics of artificial languages, that means artificially constructed languages trying to establish a 1:1- relation between concepts and terms. Basic types of documentary languages have been developed:

Documentary languages being based on natural language, that means using terms of natural language for contentual description indexing. The systems used are Keyword heading systems (taking the term out of the documents), subject heading system (allocating the term out from outside to the document), and thesaurus (highly controlled vocabularies).

Documentary languages being based on artificial language, that means using terms of an artificial nature for contentual description.

Indexes

The process of allocating linguistic expressions to documents with the purpose to indicate their content (i.e. the information contained in them) can lead to two different activities which are related to different user needs:

1. To build up a store of document substitutes which permits retrospective searches.

2. To prepare and distribute continuously collections of document substitutes which allow individual users to follow new developments in their field or exert manual searches of their own.

Such service may be either indexing services (collections of formal descriptions) or abstracting services (collections of contentual description). Both kinds of information services only are sufficient for individual use if exhaustive indexes are given to permit the user to find out which items are usable for him.

An index is a set of terms used to describe the contents of a set of document, a document itself, or something similar; and to indicate where the respective information could be found (a similar definition could be given for a catalogue, but whereas a catalogue is related to a specific collection at hand, an index may be related to each set whether there is a physical collection or not).

An index consists out of a set of index entries, each index entry indicating one unit of information. The internal structure of an index entry is: at the begining an index heading (entry word), indicating the specific unit of information to which the entry refers and being used for filing the entry into the index, followed by the source indication (index information), i.e. the indication of the place where the respective information could be found.

Beneath these "normal entries" there exist some different entries, the cross references i.e. entries which do not lead to a location but to another index which hopefully then leads to the location of unit of information.

Purposes Of Producing Indexes

The purposes of producing indexes are the following:

- To indicate the contents of a single document (e.g. a book);
- To indicate the contents of a collection of documents;
- To allow access to elements of documentary languages;
- To indicate chains of citations (citation index).

In general it could be said that indexes are used to allow access to "something" in another way than the "something" is organized itself. According to different purposes of indexes and difference of sources which have to be indexed a lot of different possibilities to organize index headings have been developed. The usual case would be that index headings (or entry terms) are of natural language although in some cases notations or numbers may be used as index entries as well (e.g. a classified index to a vocabulary, a chain index to a faceted classification).

The most important problem in using expressions of natural language as index headings lies with the fact that most of the technical terms which have to be used to allow detailed access are not a single syntactic nature but are compounds. In some languages (e.g. English) this leads to a situation where the generic part of a compound is located after the specifying one (e.g. "hierachical classifications"). This has lead to two different kinds of headings: The "natural" heading (heading in the natural word order), and the "permitted" heading (where each significant part of the compound constitutes an entry of itself, e.g. "classification, hierarchical").

The principle of presentation constituted one of the most important kinds of indexes which have been developed in documentation presented indexes. A specific kind of presented index which has been developed by the use of electronic data processing are the context indexes. Context indexes do not give only the entry term and the source indication but add the context of the entry term (e.g. if titles are used for indexes). The most famous kind of presented context index is the keyword-in-context-index (KWIC-index) with several variations.

Usually indexes are constructed out of simple index entries i.e. entry term and source indication (and in context indexes with some context). But this leads (even in printed index) to an isolation of units of information, that means those entries which belong together are separated if they are not alphabetically similar at the beginning of the entry term. Therefore more complex kinds of entries have been developed where only the same generic terms are filed alphabetically and those entry terms which are subordinated to them are not filed in the alphabetical order but subordinated to the generic term. This is an indication that there is a trend from the purely alphabetical index in direction to a mixture of alphabetical and systematic index.

Another kind of index has been developed in some abstracting services where it was felt that the content indication by isolated terms was not sufficient (since if there are a lot of abstracts to be indexed too many items may be filed with one entry term). Therefore a kind of index was developed which allowed a deeper description of contents. The basic idea was to index a source not with isolated terms but chains of terms or even chains of phrases. Then every term (or phrase) of the chain constitutes an entry into the index. Thus to some extent again hierarchical grouping within the index is possible. The alphabetically organized sources, often systematic organised indexes, may be helpful (e.g. in thesaurues or alphabetically organized vocabularies). A kind of index in this connection which is no real index are the graphic display used nowadays in thesaurus.

There are several indexes according to different formal or contentual characteristics, e.g.:

- Author index;
- Name index (persons named in the documents);
- Corporate body index (corporate authors);
- Institutions index (institutions named in the documents);
- Subject index (alphabetical and/or systematic);
- Geographical index (geographical entities named in documents);
- Index of chemical formulae.

Particularly in connection with indexing and abstracting services the mode of updating of the indexes is of specific interest. There are several possibilities:

- A completed index (no updating);
- Current index (to be updated);
- Non-periodical index (made available non-periodically);
- Periodical index (published periodically);
- Cumulated index (new entries added to already available).
- Updating could be done periodically or continuously.
- Post-coordinate Indexing Systems.

Post-Coordinate Indexing Systems

The principles of these systems were conceived by Mortimer Taube in early 1950's. Taube's original ideas relied upon uniterms/one concept terms. In that case each document was given an accession number and then its subject analysed and given a number representing the subject content. The accession number pertaining to a given document was entered under each of the index terms. The important feature is that the concepts are coordinated at the search stage. Most of the post-coordinate index depends upon specialized equipment and storage devices. Today computer based systems offer opportunities for coordination of index terms during the search process.

The first postcoordinate indexing systems were based on cards and lists which have now been superseded by indexes and retrieval systems based on computer databases. The reason why card-based systems have been overtaken by computer databases, is that most cards based systems have a limited capacity either in terms of the number of documents that can be indexed under the system or in terms of index terms that can be admitted into the system or both. The cards based system is therefore best suited for a specialised and narrow subject area or a small collection of documents. It is for that reason that postcoordinate card systems were mainly applied in small special libraries.

The second reason is that the physical format of card- based post-coordinate index also restricts their use to setors in which the librarian acts as an intermediary between the index and its users. Card-based post-coordinate indexing have largely been associated with controlled indexing languages. The terms in the controlled indexing language are normally recorded in the thesaurus which (displays) relationships between words. In computer-based systems the terms which are used as search keys may be terms from a controlled indexing language or terms from the text of the record. The first one is similar in principle to the card based post-coordinate indexing but the second does not involve indexing by humans. The computer assigns the terms and the only role of humans is in searching. Following are characteristics of post-coordinate indexes:

- None of the entries is document specific - i.e. there is a large number of documents under each heading;
- There is normally a large number of entries in a post-coordinate indexing than in the pre-coordinate indexing;
- During search the user is involved in extensive scanning of many entries in order to discriminate between relevant and less relevant documents.

Card based indexes can be grouped into two: item record indexes, and term record indexes.

Item Entry: Records are serially ordered by document identifier / number. Each entry/record stores the total information relating to one document that is available in the system.

Term Entry: Records ordered by index terms with each entry an index term and the document representation listed in association with that term.

An item entry can take several forms. It can be a list of terms: on the cover or front page of documents to be indexed. It can be **catalogue cards**: with each card representing one document and the terms and citation of a document listed on that card an improvement over the first option. And it can be **edge notch cards**:

each card acts as a surrogate for one document and the index terms for that document are encoded around the edge of the card. Edge notch cards have a series of holes around their perimeter and the piece of card between the hole and the edge of the card may be removed, (using a punch) to form a notch.

The pattern of notches and holes stores the index terms assigned to the document for which the card is acting as surrogate. Searching is performed by inserting a needle through the pile of cards at the position of the hole(s) which represent the terms to be searched. The notched cards, representing relevant documents will drop off the needle and fall from the bulk of the pack. Term Entries can take several forms:

Term cards: In an index based on term cards - each index term is given one card and on that card are displayed document numbers for which the particular index term has been assigned.

Terminal Digit cards: These are closer to the item above but in this case the cards have the document numbers listed on each card arranged in an order which is designed to facilitate scanning and comparison of lists of numbers. Each document number is entered in the column of the card according to its terminal or last digit. Each card is divided into ten vertical columns headed, respectively from 0 to 9.

Optical coincidence cards: Provides space at the top for a keyword and the index is arranged in an alphabetical order by keyword. Each card has a grid covering most of the body of the card which provides for the coding of document numbers. When a document is to be stored on the card pertaining to a given index term, a hole is punched in the position that serves to represent that number. Searching involves reading the coding corresponding to the position of the holes, and comparing the holes that recur on more than one card, by optical coincidence. Cards are superimposed, on the top of one another and aligned. Positions on the card where the light passes through all of the cards in stack correspondence to documents that have been indexed under each of the terms. Optical coincidence cards are usually stored in a tray which displays the index terms at the top of each card allowing alphabetical sequence to be easily followed.

Automatic Indexing

Computer - based indexing systems have, in general, not tried to emulate the mental functions of a human indexer. To programme a computer to select "significant" terms from a natural language text is too great a task and may be too demanding. Automatic indexing has relied on methods based on the relative frequencies of the words in text. There is a group of appreciable frequency of occurence that are regarded as having "resolving power" - best able to represent the information. It is these group of words that automatic analysis seeks to select. In practice, automatic indexing usually operates as follows:

(a) The texts analysed are often not full primary information: an abstract, summary of primary text is humanly produced and machine-readable version of this analysed by computer.

(b) The very frequent non-significant words are removed from this summary text by matching against a "stop list".

(c) The remaining words are passed through a stemming process to remove from suffixes and at titles prefixes and reduce each word to its root stem. It has been found that the stemming process improves retrieval performance.

(d) The occurence frequencies of the stems in the text collection analysed are then computed to derive weighting function for each system.

(e) Each stem with a weighting function greater than some arbitrary threshold value is assigned as an index key to the text in which it occurs.

There are other ways which can be used in automatic indexing but not much have been used, e.g. term/term association.

Where the information stored is brief (e.g. a directory) it may be included in the recorded messages in the retrieval system making it immediately accessible to search. Automatic access to primary information stores is taking a number of forms. Provide the retrieval system with an electronic mail facility so that after identification of records that relate to wanted information a message can be sent to primary store (e.g. library) requesting provision of the primary texts.

A method that has been used with microcomputers retrieval systems is to link the microcomputer with videodisc player so that the retrieval programme can call up required images from the video disc. The method known as "Electronic document delivery" consists of the storage in digital form of extended primary information including both text and graphics. The text is converted to digital form by the usual methods of input (Keyboarding, Optical character recognition (OCB): the graphic material is scanned by fascimile camera which translates images into digital form. The store can be accessed by electronic mail and requested documents can be transmitted electronically and converted to legible form by a digital fascimile display.

Edward Waiguru Muya:

INFORMATION MANAGEMENT - THESAURUS

As classification schemes grew more complex, they brought two main problems: an alphabetical index to the scheme (to save the users having to deduce the class) was needed, and the schemes became too complicated for use as both identification of subject matter and as a meaning of identifying their relative physical positions on the shelves. The need for a thesaurus was born.

In the 19th Century Peter Mark Roger created a dictionary where he grouped words into sets and sub-sets showing synonyms, antonyms and relationships with words in other sets. The term thesaurus is a Greek word meaning a 'treasure house'. In the Oxford English Dictionary it is entered as 'a treasury, a storehouse of knowledge'. American standard 'Guidelines' for thesaurus construction defines thesaurus as "a compilation of words and phrases showing synonymous, hierarchical and other relationships and dependencies, the function of which is to provide a standardised vocabulary for information storage and retrieval".

A thesaurus is concerned with a structured catalogue of words from which an indexer or enquirer draws a few to represent the content of one particular document. This identity should hold sufficiently well for that document to be recognized within a collection of documents as one satisfying an enquiry expressed in those words - or in different words of similar meaning. A thesaurus is the medium for ensuring as close a match as possible.

Thesaurii Retrieval Systems

These are commonly utilized in retrieval systems whereby words/phrases are attributed to each document according to its content and enquiries which might be answered by one or more documents in the whole collection are given descriptive words: where there is sufficient degree of match, the identities of the documents are known. Several individual words may be used as a descriptor, identifying a concept. The extent to which a match is possible depends on:

- The probability that the document collection contains the information relevant to the enquiry;
- The probability of the descriptors chosen for any document accurately representing the content of the document;
- The probability of the descriptors chosen to represent the enquiry accurately matching the intent of the enquirer; and
- The efficiency of techniques used for matching enquiries and documents.

The reasons why a thesaurus is preferred against use of natural language are:

- Many users prefer a conventional means of presearch sampling of candidate terms;
- Use of 'Used-in-the-document' words is expensive, since the 'connect time' could easily exceed, in time and cost the use of formal thesaurus for descriptor selection;
- The obstacle imposed on efficient search by identification of the correct words for the enquiry.

At this day and age there may be no good reasons for constructing ones own thesaurus as there is a large number of macrothesaurii on which to draw. The principles for thesaurus construction are:

- No very rare words should be included in a thesaurus since they may not produce many matches between documents and search requests.
- Very common high-frequency terms should also be excluded from the thesaurus since they produce too many matches for effective retrieval.
- Ambiguous terms should be included only for the sense that they are likely to be present in the document collections to be treated.

- Non-significant words should be studied carefully before they are included in the list of words to be eliminated.
- When tackling a subject which you know very little, start getting to know it well.

The above principles should be used in questioning the admission of any term to the thesaurus.

Relationship between Words

In any thesaurus there are sign-posts to the user to help him to choose the most suitable descriptors to express his concept. From this it should be easy for him to find the word in mind whether it is a descriptor and with it find references to:

- Broader terms - more generic than it.
- Narrower terms - more specific than it.
- Related terms - similar but not equivalent to it.
- Equivalent terms, synonyms or used synonymously.
- Use terms which instruct him to use an equivalent word.

Broader or narrower terms: The recognition of generic/specific relationships is an important task in thesaurus-making. 'Toe' is part of 'foot' which is part of 'leg' which is part of 'limbs' of which 'arm' is narrower, 'hand' yet narrower and 'finger' is narrowest.

Related Term: A term can be related to another by function, e.g. leg and walking. Usually there may be difficulties in making explicit the difference between the truly generic/specific and that imposed by the context of document and/or readers requirements, e.g. if a user wants information about mice - irrespective of whether as a kind of rodent or as a kind of pest - he can retrieve both by using 'mice'. If he is interested only in mice as rodents he will use two terms (rodents and mice). It is a function of the thesaurus to make such a relationship clear and to ensure that the user knows what to use for the concept he requires. 'Mice' are related to both 'rodents' and 'pests'.

Equivalent Terms and Use Terms: Where two terms are used as if they mean the same thing normally one will be used as a descriptor and will be shown in the thesaurus as 'preferred term' or as 'used for' the other, though both will appear in the thesaurus. These allows the users to take the approach he prefers but end up in the same place. An instruction 'A' use 'B' or 'C' can ensure that 'A' is never used providing a mandatory ban on the use of that word. 'Add' or 'Use also' are mandatory instructions to use another descriptor in addition to that being looked up. 'See' reference requires the user to look at the referenced term to make sure that the term thought of initially is the better term to use in the case.

Links and roles are not part of the thesaurus but relate to its later use. But roles have generally been unsuccessful and hence not widely used. They are meant to show how a descriptor is used. Links are used where a document deals with two aspects of a subject, descriptors common to each aspect are repeated, and the appropriate descriptors to differentiate the two meanings are added, one added to each group.

The Process of Thesaurus Construction

There are two approaches to thesaurus construction, the analytical method: involves analysis of the subject content of the literature and selection of terms preferred, and the Gestalt method: employs experts who analyse candidate terms from secondary sources such as indexes and other reference material, they make selection of preferred terms and determinate the relationships of terms to each other.

In practice both methods are combined. The analytical approach starts with indexing a collection of documents comprising the field of knowledge the thesaurus intended to cover. Using the data obtained the thesaurus builder can start to establish a tentative relationships for the retrieval system. Then the thesaurus will be corrected by reindexing the starting collection and expanding the material to be indexed.

The Gestalt method needs as a starting point an overview of the structure of terminology in the area of knowledge concerned, the structure in effect any discenieble classification, experts familiar with the subject matter are asked to recognize such a relationship and structures as they review terms selected for describing documents. In contrast to the analytical approach, the thesaurus is not built up by practical experience, but by contribution of authorities.

These are four steps involved in the selection of descriptors, namely collection, verification, evaluation and choice:

Collection: Sources for term collection may be potential users and subject specialists, standardized potential users and subject specialists, standardised technical dictionaries, current literature, terminological lists, existing thesaurus and classification schemes, indexes of technical journals, abstracting services, textbooks, hand-books, etc. and experimental indexing of documents.

Verification: The authenticity of the selected descriptors should be verified by consulting dictionaries, standardised vocabularies, current usage in the literature and opinion of subject specialists. The thesaurus should be able to accomodate the words that proliferate in expanding fields - terms whose connotations have changed with the passage of time should be taken as such.

Evaluation: In evaluating the utility of candidate descriptors reference should be made to their frequency as encountered in the literature, effectiveness and expediency in connoting the particular concept, authenticity as current terminology in the discipline concerned, relationships to descriptors already accepted, and anticipated incidence in retrieval enquiries. None of the factors should be considered independently.

Choice: Descriptors should be selected for inclusion in the thesaurus on the basis of their estimated effectiveness for retrieval purposes and their significence in the material to be indexed.

Recording Procedure

A format must be developed and used in specifying those items of information which are used for thesaurus construction. You may use a card for recording. Each time a word is considered to be a candidate descriptor a record must be established. The concept relations contained in the sources from which the candidate term has been selected should be recorded during this selection process. In each case it is necessary to establish whether the relations found within the source depend on the specific context or holds in general.

During construction, tentative decisions can be made and changed later. This calls for the builder to make proper notations under every term affected by each decision, e.g. Term A use Term B requires the use note on the term A record and the reciprocal used for note on the Term B record. Following such a procedure it is possible to change a decision any time; as the note structure provides the information necessary to keep the thesaurus internally consistent - all affected entries can be located and changed to conform to a new decision.

In deciding on the entry of descriptors, the selected terms should be grouped systematically. Each descriptor should be checked for its concept relationships with other decriptors. Subject specialists and potential users should be consulted in selecting the descriptors and determing the concept relationships.

Uses And Users

Any thesaurus must have explanatory notes to show: the principles underlying the theory on which it is founded, and the rules which have been followed during the creation of the thesaurus. The complexity of the questions must be anticipated in the thesaurus, so enquiries presently being received must be continually monitored and in particular why the question has been asked must be recorded. It is not enough to know why Wandera wants information X; Why he wants it (described by words Y) and what use he proposes making of it (described by words Z) must be known if the thesaurus is to continue to facilitate his use of the document collection. This is particularly crucial if a new thesaurus has started to get used.

It must be emphasized that the thesaurus must be adapted to the vocabularly of the users. Taken further we can say that it must be adapted to the use the users intend making of retrieved references. Where the output of the system is to answer highly specific questions the thesaurus be must have specific descriptors. If it is to be used for a current awareness system - ensuring that users know of the incoming documents - is necessary. If it is for both then it must be make specific and generic retrieval possible. Of course the use or logic can reduce the need of generic words.

Many computers may not have the capacity for many ors and a retrieval programme with limited facilities must put into consideration that factor. Bear in mind the retrieval to be used retrieval and the purpose which the retrieved information is to be put. Filing sequences are "Word-by-word" (Recognizes a space as being of filing, importance before any letter); and "letter-by-letter": (Assumes that space does not exist and treats the first letter of each word as an immediate continuation from the last letter of the previous word).

Thesaurus Maintenance

A thesaurus should be updated continuously as follows:

Period Verification: Periodically a check should be kept on the frequency with which descriptors are utilized for indexing and retrieval purposes. Check also to ensure the descriptors chosen do not duplicate one another and the relations established within the thesaurus are still right. Descriptors which have become obsolete should be eliminated or replaced with more appropriate ones.

Elimination of Descriptors: Complete elimination should only occur when the particular descriptor has never been used, either for indexing or retrieval. The use of a preferential relationships (use-reference) to indicate where the replacement has been effected is more practical. If a descriptor has been eliminated, it should be used as a synonyms. If too many indexed materials are assigned to the same descriptor its specificity is lost, its application has become too general and a breakdown of the descriptor should be considered.

Choice of new decriptors: If, during indexing and/or retrieval, it is found that concepts or concepts relationships have not been established with sufficient precision in the thesaurus, new descriptors or relationships must be established.

Indexers and users should constantly be on the look out for new candidate descriptors. New terms and relations must be evaluated for usefulness. The frequency of occurence of such a candidate descriptors both as indexing and retrieval terms is an indicator of their future usefulness. New descriptors should be saved up and introduced in batches either as "additions to the thesaurus" or on the occasion of a new edition of the thesaurus.

It should be remembered that a thesaurus is never completed; its size and shape is a function of time.

Edward Waiguru Muya:

INFORMATION MANAGEMENT - RETRIEVAL

Background

Information retrieval was coined by Calvin Mooers in 1950. It is generally taken to cover the whole field of the problem of recovering information from recorded knowledge/information that may be required at a particular time for particular purpose. Though this tends to include conventional practices (classification and cataloguing) the tendency is to regard the subject as providing a substitute for such methods. But as of now we don't have a recognisable or accepted body of theory in this field. It can be in many forms ranging from simple cards to computer based installations. **But the fundamental problem which is common to all is that of providing the nearest possible coincidence between the description of a subject by the searcher and that used to enter documents on the subject into the system.**

The issues involved here are the Recall factor and Pertinency factor. Recall is the ratio between the number of relevant documents retrieved in a search and the number which ought to be retrieved (total number of documents in the system which are relevant). Pertinency factor - Ratio between the number of relevant documents which are retrieved in a search and a total number retrieved. The two factors are limited by practical considerations such that perfection is never reached.

Some systems may be designed to serve one of the two requirements. However, it has been suggested that readers in libraries fall into two categories: those who require a specific information about a specific subject (specific reference), and those who wish to study a subject in all its ramifications and perhaps even to explore its so called related subject (Generic survey).

Claims have been made that a classified catalogue serves the purpose of generic survey while the alphabetical-specific catalogue is better for specific reference. Others have gone on to say that the needs of the two approaches cannot be met in a single system. In special libraries it is probably true to say that we are concerned with specific reference than with generic surveys. The specialist is concerned with a specific area of knowledge. Probably, the difference between specific reference and generic is one of degree other than of principle.

Basically there are two ways in which we can handle subjects for the purpose of recording documents in a retrieval system and recovering such documents or their addresses for interrogating the system:

(a) The naming of · the subject with provision for ensuring that there will be adequate matching between subject designation at searching and that at indexing. Proper handling of the subject designation is the crux of the matter, whether "known order" or any other principle be the basis of locating relevant entries.

(b) The other method is to classify; here the subjects are entered in the system and recovered on the basis of relative position in the scheme of things.

Information Retrieval

Vickery defined Retrieval as: "The operation by which items are selected from a store, then not only a library catalogue, but also any index or bibliography is a retrieval device. The process of retrieval takes place repeatedly in every search for information". In carrying out a search we need to clarify the subject of search, define its terms, decide its scope (Need to scan encyclopaedias, dictionaries, and other reference books); we need to get an introduction to the subject and identify suitable books (Need to scan the catalogue, booklists etc.); and we require references to articles on a subject (Need to abstracting journals, current awareness lists current issues of journals). We must in all cases scan systematically all lists.

The point of entry into the tool is a list of words (Index entries, a table of contents). These may be linked directly to document identifiers (references) or may be linked via a code. In information retrieval there are four phases:

- Word Retrieval: We identify the words adequately describing the information sought;
- Reference Retrieval: We identify references pertinent to the enquiry;
- Document Retrieval: Actual documents are located;
- Data Retrieval: The sought information is extracted from the documents.

Retrieval systems serve two purposes; one is current awareness - to call to the attention of users newly acquired items of potential interest to them, the second is retrospective search - to provide for a search throughout the whole of a store for items of interest to a particular user.

The Retrieval Process

1. A decision is taken as to what kinds of key will be used to identify documents.

2. Appropriate keys are derived from or assigned to documents.

3. The keys selected may be standardized and coded.

4. A physical record is prepared associating the profile with an identifier for the document.

5. All the records are filed.

6. A profile expressing some user query or interest is prepared and standardised.

7. The user profile is compared with document profiles and appropriate document references or locations obtained.

The raw material for retrieval consists of the following characteristic features of documents:

- One or more authors
- A title
- A publishing body or source
- A date of publication
- A statement of author affiliation
- Figure and table captions
- Citations to previous work
- The contents of tables
- Typographically distinct words
- Headings at various levels
- An abstract or summary
- An index.

Retrieval in a Postcoordinate Index

The output of retrieval in a postcoordinate index depends on input of the system. Different storage offers access to different types of information. Levels of access are: the store provides a reference or document number; the store can allow direct retrieval of data or information (statistical, item-record indexes etc.); and the store permits the processing of information that it contains but after processing the data in the store differ from the initial content (in editing, amending of catalogue cards). The output from post-coordinate index is usually in the form of document numbers, references or the document itself.

Searching means "the process of scanning the index records to determine which identifiers are associated with certain search (key) the index terms". Potentially relevant documents depend upon the quality of indexing in the system and the skills of the searcher. Quality depends upon:

- The quality of the thesaurus;
- The standard of indexing (thoroughness, consistency);
- The intellectual level and intent of document content;

- The nature of the document;
- The quality of the document and its associated records.

Search logic is the means of specifying the acceptable combinations of terms which can be assigned to a document cause it to be, assessed as relevant searching amounts to more than making a move of the records listed under one index heading. Post-coordinate indexes are expected to be searched by comparing records entered in association with two or more index headings or terms. In creating a search logic various devices have been tried and the possibilities for more sophisticated logical statements are enhanced in computer based systems.

A basic feature of all post-coordinate indexing systems is that it should be possible to search for a set of records meeting certain criteria and then from that set to select a further set of those that also match an additional criterion thus broadening or narrowing the search.

Truncation and the ability to search on wordstrings or character strings are available in almost all computerized post-coordinate indexing environments. Searching with truncated stems enables the searcher to search simultaneously for a number of words with the same stem, e.g. "Nation" - nationality, nationalities, nationalization, nationalize, nationalism, national.

Truncation can be achieved by right hand truncation, left hand truncation or masking of letters in the middle of a word. Right hand truncation involves specifying the stem to begin a word, and left hand truncation involves specifying the stem to finish a word. Both right and left hand truncation may be employed simultaneously. The masking of letters in the middle of a word is useful for language variants.

Contextual logic operators make it possible to specify the location of terms with respect to one another. The operator SAME finds any document in which terms appear in the same paragraph of document; the operator WITH finds any document in which terms appear in the same sentences of the document; the operator NEAR finds any document in which terms appear within a specific amount of words of each other and the operator ADJ finds any document in which terms are adjacent to each other.

The ability to search for the occurence of terms in specific fields within the record makes it possible to be more precise in searching, e.q. to find a term which appears in the author paragraph.

The assumption with weighted-term search logic is that in most search statements or documents profiles it is possible to designate certain concepts as being more significant than neighbours. Weights is a quantitative measure of the prominence of various index terms in the description of a subject. Weighted term logic may be introduced either as a search logic in its own right or as a means of reducing the output from a search.

In an application where weighted-term logic is the primary search logic, search profiles are framed by combining index terms in a simple logical sum. Each term is assigned a weight which reflects its significance in determining the relevance of a document to the search question, and document reference worthy of printing are selected on the basis of a threshold weight. A threshold weight appropriate to the specificity of the searchers enquiry must be established. By modifying the threshold weight the search specifications can be broadened or narrowed.

Weighted-term logic may be used to supplement Boolean logic. The weighted term logic is a means of limiting or ranking the output from a search that has been conducted in response to a search profile framed using Boolean logic. In the process of the search the computer ranks references according to their weighting and only those documents with sufficiently high rankings will be deemed relevant and retrieved. Documents that satisfy the logical statements are first sought and from this first set are selected those documents with total weight that exceed the threshold weight.

The KWIC index (Keyword in context - permuted index) contains multiple entries from all the significant words in each title and is usually compiled using data processing equipment. Each document is given a code number (an accession number or based on an author's name). These are processed using a computer. Author Index: alphabetical order. Source Index: publisher's data. Title Index: where an entry will be constructed for each title-word not on the stoplist. The entries are put in alphabetical order of title-word and printed out against each entry being its appropriate code number. Two formats are used: the KWIC form, in which the rest of the title is wrapped around the keyword "in context", and the KWOC form, in which a key word is extracted as a heading out of context.

A citation index consists of references that can be arranged by author or title or source related to references that have cited them. A document may cite others, e.g. science citation index to follow up such citations. Extends an information search into past literature - cited documents are likely to be relevant to the subject of the citing document. Citing documents are also likely to be relevant to the subject of one cited. To locate items that cite a key document is away of extending an information search into more recent literature. To search a citation index is to enter it with a key reference in one's subject and to examine documents that have ared it; the search can be extended by entering with reference A which leads forward to B and C; consulting these documents which lead back to cited references D, E, F, and so on.

Levels of Evaluating an Information Retrieval System

An information retrievel system can be evaluated according to the following levels: effectiveness, benefits, cost-effectiveness, and cost-benefit.

Evaluation of Effectiveness: This should be an evaluation to which a retrieval system satisfies its users information needs - ideally. Most studies show the extent to which a retrieval satisfies users demands (Expressed needs).

Evaluation of Literature Searching: The end result of literature searching services is the delivery to the user of a group of documents (or references) that deal with the subject of the request. The results of a literature search are not readily assessed on a YES or NO Scale. The evaluation is more concerned with the success of the search which implies some quantification of the results of the search. You want some indicator of users satisfaction. At times one can use a subjective approach by asking how satisfied the users are with the results. But satisfaction here is relative. A user may express satisfaction with the results of a user search but he knows that the search had overlooked documents that are better than those retrieved; the evaluation will be one-sided, based on what has been delivered to him.

Cost-Benefit Analysis: A benefit evaluation attempts to determine how the users benefit by an information service (is a particular information service worth having or its cost outweights its value to the organization it serves). Effetiveness can be evaluated in quantitative terms, e.g. the percentage of success in document delivery. But benefits are difficult to express in quantitative terms. It tends to be subjective. A cost-effectiveness study relates measures of effectiveness to measures of cost. A cost-benefit study relate the cost of providing some service to the benefits of having the service available.

Evaluation of Cost-Effectiveness: Effectiveness is the extent to which a systems' goals are achieved. Cost-Effectiveness measures the efficiency of something relative to its cost. It is concerned with the cheapest mean of accomplishing a defined objective or getting the most value from a given expenditure.

Augustes Musana:

ABSTRACTING

An abstract is an abbreviated representation of a document. It differs from extracts, summaries, annotations and reviews in that:

- an extract is one or more portions or parts from the document that have been selected to represent the whole;

- a summary is an attempt to restate within the body of the original document highlighting the salient points to enable the render of the document to gain more understanding of the document. In short the summary tries to reinforce important points in a document;

- an annotation is simply an added note to the bibliography of a document;

- a review is an attempt to make literature survey of some newly published work. It tends to include some criticisms on the quality, accuracy of detail, etc. of the work.

In general the purpose of an abstract is to save a reader time which he would otherwise have to use for gathering and selecting information he requires, some of which may not be quite as relevant to the needs of the user. The concept of abstracting is based on the fact that there is an exponential growth in literature so much so that no user whether researcher, manager, general reader, can hope to keep abreast of developments in his field. A way must be found, therefore to reduce the size of the original document. Of course, in the process of reducing the contents in the original document to some manageable size, some information content may be lost. But every care must be taken to include the important or salient points.

Types of Abstracts

There are in the main two types of abstracts, informative and indicative. The purpose of this is to provide the user with quantitative and qualitative contents in the original document. All in all it should obviate the need for the original or full text.

Informative abstract: To be successful it must contain the purpose, the method, the conclusions, and any other specialized information, if any. As stated elsewhere inclusion of slant criticism tends to water down the role of the informative abstract as a representation of the original document.

Indicative abstract: This type is intended to indicate what will be found in the original or full text were it consulted. It tends to be shorter than the former type, if for same document. It is quicker and more economical to produce. Since it is merely an awaring aid it does not survey a lot of information.

Informative-Indicative abstract: This includes the basic components of each one of the main type i.e. while highlighting on certain major aspects of the original documents it is only indicating certain points of other aspects.

Critical abstract: This describes and evaluates the original document of course, at the same time avoiding to become a critical review. It endeavours to indicate the type or level of audience the document is intended for; the quality of work etc. This type, however, like the critical review requires an abstractor who is knowledgeable in the subject matter besides being highly experienced in the art of abstracting.

Slanted abstract: This is intended for a definite audience. It tends to dwell on an aspect such as method, results etc.

Mini abstract: These may be merely keywords, or very brief phrases (telegraphic) or a couple of sentences. The short sentences may be more preferable because they are easier to understand.

Statistical abstract: These present numerical data, mostly in tabular form. They are good for projections of use and market trends. They are susceptible to being concise, easier to read and objective.

Advantages of Abstracts

Current Awareness Services: These are a method of getting users posted on a subject of their interest. By scanning that literature likely to contain relevant information, regardless of language of publication and condensing it to manageable proportion it is possible to keep the user reasonably updated.

Reading Time: An abstract by the nature of its size will enable a reader to save on reading time. It may be easier to digest the information if it is abbreviated. It is also believed that it may be possible to improve upon retention rate.

A Tool for Literature Selection: This is especially useful for librarians and others involved in selection of reading material. By taking out of the full text the salient points the skeleton of the original is exposed, thus making it easier to choose or not to choose the item for the library collection.

A Tool for Literature Search: How can anybody really go through all the millions of published items without some simplified aid? An abstracting service, especially if accompanied by a good index fulfils that purpose.

Efficiency in Indexing: By looking at the very salient points in a publication the abstracting service is also assisting the indexer. The latter will find ready made decriptors, those that have either been accepted in the language of the practitioner or are very likely to be accepted.

Language Barrier: Language serves as a barrier between the relevant information and the seeker. Not very many researchers, experts, etc. are likely to have a very good knowledge of the major languages. An abstracting service that includes within its domain translation of articles from the other major language for instance, into English, will be a great asset.

The three characteristics of an abstract namely brevity, accuracy in terms of bibliographic citations, and clarity are especially important in those situations where the abstract is intended to obviate the need for reading or referring to the original. In the context of developing countries this is so important. We may find it easier to see the abstract than the original.

Examples of Informative and Indicative Abstracts

Title of Article: **"Traditional cooling systems in the third world"** (Quoted from "Dissemination of Information", by J.E. Rowley and C.M.D. Turner. Andre Deutsch, 1978 p.p 168-169). The article originally appeared in The Ecologist, 6(2), Feb. 1976, pp 60-64).

a. Informative Type

As demonstrated by the Maziara Cooling jar, indigenous technologies are generally more suited to the developing world than advanced Western technologies. Early in the morning the cooling jar is filled and during the day water seeps through the porous, unglazed ceramic jar maintaining a wet outside surface. Some water from the outside evaporates keeping the drinking water in the jar cool. In tests in Egypt, with outside temperatures ranging from 19 to 36 degrees centigrade, the remainder of the water may be collected as it drips down the outside of the jar, and drunk; tests showed this water inside was contaminated. The cooling jar compared very favourably in energy consumption terms with a mechanical air conditioning unit. Porous water jugs, and dampened matting used in conjection with wind-catching towers, tall narrow courtyards, wind shafts leading to basement water cisterns and water jars mounted in window openings may be used to cool rooms. Perishable foods may be stored and cooled by placing them in a glazed inner jar inside a porous water jar.

b. Indicative Type:

The merits of indigenous as opposed to western technologies, are illustrated in discussing the maziara cooling jar. The mechanism of the jar is described. Tests results, showing that water remained cool in the jar all day, despite widely varying ambient temperatures, and that water seeping through the jar was purer than water contained in it, are reported. Cooling jars compare favourably with mechanical air-conditioning units, in energy consumption terms. Other room or food cooling systems prevalent in developing countries based on damp reed matting, cool cellars and courtyards and water-cooling jars area described with illustrations.

As can be seen in the above examples it is easier to determine whether it is worth requesting for original by looking at the informative abstract. The indicative abstract on the other hand contains only slant information.

Abstracting Technique and Procedure

It is difficult to give a specific or definite abstracting technique and procedure, as this may differ from organisation to organisation. It can, however, be summarized that abstracts formulated along the following scheme are likely to serve a better purpose.

(a) Read the full text completely and intelligently, placing emphasis on the author's main idea. Initially it might necessitate reading the text several times. With experience, though, the abstractor will be able to detect the major elements without having to read and re-read the source document over and over again. In short, map out the author's plan.

(b) Plan the writing of the abstract. Write out a first draft of your understanding of the full text.

(c) Check on the readability, accuracy, grammar, syntax of the draft, and compare it against the original in accordance with abstract characteristics, namely brevity, accuracy, clarity.

Determination of Style and Content

Style and content of an abstract is generally dependent on the following:

- User needs: who is the user? A research worker or general reader; a manager, or a worker at operational level?

- Availability and accessibility of the source document. For instance, can the user get the source document very easily? If so, may be an indicative abstract, given its ease and economy of production and therefore speedy alerting, might suffice.

- Available manpower resources and their expertise. For instance, are they both subject specialists and abstractors or only the latter? Would there be cause for hiring part-time or outside expertise?

- Availability of time.

- Subject fields: is the field the type that would necessitate immediate dissemination of information?

- Storage device: on a card or on computer data base. The latter will necessitate storage of search terms, too. Besides, too long an abstract is likely to take up a lot of space and where storage is computer-based it could prove too expensive.

To-day there are thousands of abstracting services that can be accessed by any library or documentation centre. Examples are psychological abstracts, anbar (in various management areas such as Top Management Abstracts), sociological abstracts, agricultural abstracts, chemical abstracts, etc. These and many other abstracting services are produced professionally, although some of them may tend to have a commercial bias. Unfortunately for us most of these services are produced overseas and to acquire them we need foreign exchange. There is therefore the temptation for us to consider producing our own in-house abstracts.

The questions we should address ourselves to as we discuss the issue of information resources sharing include among others:

- Given that most of our libraries and documentation centres are to a great deal dependent on the overseas market for most of our journals, and given that many of these are indexed and abstracted elsewhere, is it necessary and cost-effective to abstract the same?

- Should we not spend the resources involved in identification of that other local grey literature not accessible to other indexing and abstracting services?

- Given that today CD-ROM is becoming easily available, could one sub-system within the information resources sharing and network set-up undertake to repackage the information received and distribute it to others?

Augustes Musana:

RECORDS MANAGEMENT

The Importance of Records Management

Study of records management arises due to the importance of correlated, consistent, current, complete, relevant, up-to-date and consistent information for decision making and planning, due to the need to reduce quantity of unnecessary information and to avoid information overload, and thereby improve upon quality of decisions and plans made by the manager, due to the need to minimize business and industrial espionage, due to the need to reduce costs involved in documentation, and due to the fact that our lifes are controlled through paperwork.

In a lot of our countries if you do not possess a valid passport you can't cross a border. If you can't produce a birth certificate you can't get admitted into some of the institutions like schools. Without a death certificate duly signed by a medical doctor you are presumed to be still alive. In short, therefore, records are a very essential conveyor belt of information required for planning and decision making.

A manager of an organisation whether small or big, simple or complex, is involved basically in trying to bring together or integrating and coordinating diversity of resources (human, financial, machines materials, information, time and space) for purpose of achieving a set of goals and objectives. From the information point of view, in order for the manager to effectively integrate and coordinate the resources, he requires effective and efficient communication links within and between the departments that compose the total organisation, and also between the organisation and the external environment.

As managers, therefore we find ourselves collecting, storing, retrieving, processing and disseminating information. The type of information a manager receives is dependent on the level at which he is operating and the purpose for which he requires the information.

Records management involves the study of a record right from its creation, storage and finally its disposition or permanent keeping. It is also related to office organisation, the office being the central place in an organisation where paperwork is being produced. The office must be organised in such a way that it should provide the most suitable means for collection, processing storing and dissemination of information. It is the centre of communications.

Objective of Records Management

The following are the objectives of Records Management:

1. Provision of every level of corporate activity with
    - usable
    - timely
    - consistent
    - relevant

   information.

2. Increase productivity of every level of corporate through
    - identification and addition of key responsive systems
    - techniques
    - equipment

   which all of enlarge information potential, reduce records, improves filing systems, expand retrieval and dissemination capability, reduce cost.

3. Protect company's assets through
    - preservation of essential and vital and valuable information
    - meaningful control of flow of records
    - safeguard them against physical damage, loss, espionage.

Records Management Programme

There is a need for a well formulated records management programme, given the importance attached to records in business operations. Such a programme should include:

(a) Statement of policy;
(b) Centralized control by a specialist;
(c) Records manual provision;
(d) Trained personnel who will handle the files;
(e) Procurement, utilization and maintenance of equipment;
(f) Standard: need for production of standards;
(g) Retention and disposition schedule;
(h) Continuous programme evaluation.

In centralized organisation all records are located in one central place. The advantages accruing from this system are: non-duplication of resources, quicker service, and it brings together all records on one subject.

The management of all records, wherever they are, is vested in one person i.e. control is centralized in one authority. The advantages are that there is an authority, most likely an expert responsible, that records are readily available at one location, and that it is easy to locate a record.

Qualified personnel are likely to create a better records system, and therefore win the confidence of the users. The manager of the records system should be placed high enough in the hierarchy so as to gain the confidence of the users. All records staff should understand the objectives of the programme. This calls for appropriate training of all staff at whatever level in the records centre.

It is very uneconomical and inefficient to keep any records that has served its purpose. It is therefore very important to come up with a system which will facilitate removal of less used records to less costly centres, and destruction of useless records. The organisation should ask the following questions in deciding on retention and disposition: will the record be used again? How often would it be used? Can the data contained therein be obtained elsewhere? The guiding principles for retention and disposition schedules are:

- value for administrative use
- value for legal use
- value for policy use
- value for fiscal use
- value for operating use
- value for research
- value for historical
- supporting value
- how many copies are available
- is the information in the record available elsewhere
- cost of maintenance as compared against loss of record.

The following classification could be used for a classification of records. It was developed by the National Fire Protection Association of America. Vital: There are records whose loss or destruction could seriously undermine the continued existence of an organisation e.g. legal status; ownership etc. Important: These are essential to the business. Useful: These are not essential to the continuance of the organisation but their loss could easily temporarily inconvenience the business. Non-essential: Records that have no present or future value and therefore should be destroyed.

Retention periods of a record should be set, i.e. the period of time that elapses before the records is disposed. Such periods should be made clear to the office where the record originates. To avoid misunderstanding such a schedule should be formulated by a team of a records manager, departmental heads and others interested and a legal expert. In the same way destruction of a record should be initiated by a responsible person. Transfer of records that are either useless, but haven't reached disposal period, to another less costly storage location will increase efficiency and effectiveness in the records centre.

It is important to consider security of records in the choice of equipment. Some of the hazards a record is exposed to include fire, water, heat, insects, chemicals, sabotage, espionage. Location of records centre, too must be considered. The centre may have to be located in a bomb-proof bunker. A list of personnel who are vetted or are expected to have free access to the records centre should be compiled and circulated. Any other person would have to be authorised by a responsible person.

There should be a schedule for auditing or examining the file by an appointed agent. This system is likely to come out with such errors as misplaced files. Some of the issues the file audit team is likely to come up with include :

- are files under central control?
- is there an up-to-date and adequate records manual?
- are there duplicate files, and if so are they necessary?
- are the files neatly maintained?
- is the filling correct?
- is there a retention schedule and, if so is it followed?
- are the people manning the records centre properly trained?
- are records properly protected?
- what is the cost of maintaining the records?

Reports and Forms Control

Reports are essential tools for communicating information which is a pre-requisite for sound planning, organising and controlling business operations. A report may be written or oral. If set out properly it is a very useful tool for reaching all levels of an organisation. Because of the important role played by reports in communication it is important that they are well written. Normally a report should include a synopsis, an introduction, discussion of the topic(s), conclusions, recommendations, and if necessary appendix, bibliography and index. A good report should be based on the following framework:

- Proper identification of a problem to be studied;

- A well formulated action plan to find solution to the problems;
- Data gathering;
- Data analysis;
- Summarized submission of solution to the problem.

A report should be written out clearly and concisely without having to give all data gathered but at the same time capable of enabling the reader to appreciate subject matter covered. A good filing system is necessary if reports are going to serve a very useful purpose. There is a danger of the same problem being studied time over and over simply because a report of the previous study is missing.

Forms form a major tool for execution of clerical and administrative functions. Forms are paper that are predesigned to simplify work. They are a means by which management seeks uniformity and efficiency in the various data - processing elements of business operations. This tendency is more aggravated by the fact that production techniques have improved considerably. If management does not take care it may find itself overcrowded by a deluge of forms the existence of which they were not aware of. Yet, what is true is that a form could play a big part in improving the image of a company. The objectives of a forms control programme should be:

- reduction in the total number of forms in an organisation to a level where the number and qualities exists in consonant with the actual requirements of an organisation;

- prevention of birth of other forms when some already exist and are serving the same purpose;

- consolidation of similar forms when others exist for the same purpose;

- improvement of forms design for greater clerical efficiency and/or administrative use;

- provision of basis for proper and economical storage and distribution of forms throughout the organisation;

- provision of a source for all paper used in a given procedure;
- provision of work-load studies for determining whether to make or buy;
- establishment of permanent programme for evaluation and therefore prevent recurrence of the problem.

There is a need for two files in the classification of forms in an organisation:

The functional file: forms that have similar working purposes could be grouped together. However, only one master copy of a form should be kept in the functional file. It should bear details of which department uses it, production purpose, and quantity used by each department.

The numerical file: this would include a separate folder for each form. There is need for cross-reference to the functional file.

For a forms control programme to succeed it requires support of the top management. There is therefore need to place it as high up in the hierarchy as possible.

Mail Management

The registry is the communications centre of any organisation. Yet it is also true that a lot of organisations tend to pay lip service to this indispensable unit.

Incoming Mail: A letter comes in. It is misdirected to an officer who is away on safari for two weeks. He comes back and reads the letter only to find that the right officer to deal with the subject matter of the letter was in all the time. The letter is talking about offer of US $ 50,000.00 in return for consultancy service required immediately: "If the offer is acceptable please call the Executive Secretary within the next 7 days. If we don't hear from you, we assume that you are not in a position to assist".

Outgoing Mail: It is important that outgoing mail should be speedily and accurately processed. This is likely to increase the profit and image of the organisation. Where possible equipment capable of speeding up such processing should be employed (telex and fax machines). However, such equipment should also be easy to maintain and handle.

Furthermore, proper mailroom lay-out will assist in removing those obstacles that are likely to interfere with the smooth flow of mail and from the mailroom.

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Jacinta Were:

COMPUTER APPLICATIONS IN LIBRARIES AND DOCUMENTATION CENTRES: WHAT A MANAGER NEEDS TO KNOW

Introduction

Sharing of information is best achieved by networking sources of information using computers. Computerised databases can be easily and effectively linked to facilitate information sharing. The process needs careful planning at the initial stage. Managers are responsible for providing leadership and guidelines in computerisation process. They are responsible for setting the goals for co-ordination and sharing of information resources. It is therefore important that managers acquire sufficient technical information to enable them to make the correct decisions. They should know what a computer system consists of and what it is capable of doing. The manager should know what is available on the local market in terms of hardware and software.

Hardware Facilities

A computer is a tool that we use to improve the productivity and efficiency of our systems irrespective of the professional domaine. It consists of two major parts, firstly Hardware, and secondly Software.

Hardware can be defined as the intangible parts of a computer. The parts you can touch. Hardware consists of two major parts, the central processing unit (CPU) and the Peripherals. Peripherals is a term used for all the hardware parts that work in conjunction with the CPU to input data, process it and produce an output. They consist of:

- Input devices (keyboard)
- Output devices (monitor, printer etc.)
- Storage devices (disks, tapes, etc.).

All of these parts make the hardware part of a computer irrespective of the size and make. Choosing the computer hardware therefore involves considering the power and quality of the CPU and the peripherals. The choice is entirely determined by the needs of the organization. There is nothing like the best computer. The best computer system is one that will best meet your needs.

Depending on what you want to do your hardware decision will consider the areas stated below:

- Mainframe environment
- Minicomputer environment
- Microcomputer environment
- Networking environment
- Dedicated versus non-dedicated system.

The difference between these terminologies is vital to decision making.

Mainframes are large systems that are only cost effective if acquired for processing large volumes of data. They are specifically ideal for time sharing environment where many users are accessing the same storage. It would be a total waste for a single library or documentation centre to acquire a mainframe. But if the parent organization has a mainframe installation, it is advisable to explore the possibility of using the facility.

Minicomputers are slightly smaller computer installations than mainframes. Most of the library turnkey systems like GEAC are minicomputers based. Such systems would be ideal for large libraries like university libraries. Like mainframes, minicomputers offer facilities for time sharing.

Small libraries will do better with microcomputer systems. The size of your collection will determine the size of the hard disk facility that you require. The make of the machine (IBM, ICL, Olivetti, etc.) is irrelevant for your decision making. You should accept any supplier that will meet your needs satisfactorily. At the moment any IBM compatible microcomputer is good enough. The main reason for this compatibility is the fact that most available software packages are IBM. You are therefore safer with IBM compatibles. The new technological development has made it difficult to draw a line between the microcomputers and minicomputers. The latter is actually a dying term in computer world.

Networking is a term used to refer to the art of connecting computers for the purpose of sharing information. The commonest network systems are local Area Network (LAN) also referred to as in-house network system. A manager should be in a position to decide on whether to acquire stand-alone-micros or a network system. The major advantages of a network system is that it allows you to share common files. You are also able to share common storage facilities. The problem of networking is that in most cases the microcomputers will be tied down to one room.

In a dedicated system the installation is dedicated to the use of a specific department, not shared by others. It could be shared by users within that department so long as the sharing does not go beyond the department. It is strongly recommended that libraries and documentation centres give serious consideration to dedicated systems. The needs of information centres are unique and always urgent. Such needs cannot be efficiently met under shared environment.

The Kenyan market is fairly advanced in terms of computer hardware. You can get almost anything you want. The limitation is prices which are abnormally high as a result of importation charges.

Software Facilities

Computer software are the programs used for developing computerised systems. A computer program is a set of instructions that the computer uses to carry out a particular task. Generally speaking, software are the intangible parts of a computer. The parts that you cannot see and you cannot touch. Software is the most important part of a computer system. Without the software the hardware is useless. The tricky part is choosing the appropriate software. Once the right decision on software is made, hardware is not a problem.

The important thing to note here is that the computer market in developing countries in Africa at the moment has nothing to offer in terms of software for information centres. The available general purpose software packages like DBase are not appropriate for libraries and information centres. One requires a package specifically designed for information centres. Among the general purpose packages the following could be of some use to information libraries and documentation cntres:

Wordprocessing packages (very useful)
Spreadsheet packages e.g. LOTUS 1-2-3.

DBase has been tried in libraries and found unsuitable though in the absence of a suitable package one can use it. However, if one has an alternative, DBase should be abandoned. It has serious limitations that have resulted in discouraging expenses for libraries who have tried it. DBase is a general purpose Database Management System (DBSM). Problems facing these centres are unique. They cannot be adequately handled by a general database management system.

DBase fields are limited to a maximum of 254 characters only. Library title and keyword fields go well beyond this figure. The memo field offered by DBase for this purpose is a hectic field to use. You have to call it into the database each time you want to use it. It is not automatically incorporated into the design of the database. Thus when you use DBase in libraries you are forced to shorten certain fields which can distort information.

For complex reports (outputs) one needs a programming background to use DBase effectively. You need to write programs in order to produce your outputs. Most library queries are fairly complex. One has to produce subject headings, indexes, etc. This requires a lot of programming. DBase is wasteful. It has fixed fields, meaning that space is reserved in advance equal to the maximum number of characters allowed (254). If any field falls short of the maximum then the remaining space is waisted. Nothing can be saved there.

Development trend in modern technology is shying away from programming and focusing on packages that do not need programming. That time when computer rooms were restricted to only the experts is over. Computers are descending into the hands of everyone, managers, clerks, secretaries, and even housewives. For this reason, programming requirements would be a major limitation in a software package. We need packages that do not need programming. Presently the best library software available to developing countries is the Unesco package Mini-Micro CDS/ISIS. Its advantages are:

1. The package is available free of charge to non profit organizations of the Unesco member states. With the present financial constraints in developing countries, we couldn't have a better offer.

2. It is a very flexible software. Once database is designed you can make any type of changes you want at any time. It is possible to produce any type of report (output) with minimum effort.

3. The size of the database is only limited to the size of the disk storage facility available on your computer and by the power of the operating system. MS-DOS for instance supports only up to about 32,000 records.

4. It has variable fields, meaning that the storage space for any field will adopt the size of that field at that particular time and will automatically change as the size of the field changes. Thus variable fields do not waste disk space. Furthermore it offers a facility for unlimited number of fields. The maximum number of characters for a field is over 1600 which is more than what information centres require.

5. CDS/ISIS is easy to master. You do not have to be a programmer to use it effectively. The format language is very easy to master.

6. The software was designed specifically for libraries and documentation centres. It therefore answers about 99% of data base problems in these centres.

The disadvantages of the Mini-Micro CDS/ISIS software package are the following:

1. Presently the main CDS/ISIS problem is the absence of network version. You cannot gainfully run it on a network environment. Unesco however is working on this problem. It has been announced that a network verion will soon be released.

2. The other problem is that it's mainly a DBMS. It cannot handle housekeeping processing like issuing of books in libraries. To handle this area, one has to shop for integrated packages on overseas market.

Computerization as a Management Issue

The current revolution in computing is changing the way we manage organizations. Managers in a computerized environment must be aware of this change and learn to adopt to it.

Managers must realize that computerization is not just a matter of acquiring a computer and hiring professionals to design and develop information system. They are responsible for decision making of the information systems being developed. They must determine the information they require for their users and for planning. Managers must therefore be in a position to set priorities and establish criteria to ensure the relevance and scope of information, the structure and availability, and the presentation and distribution of this information. They must be involved right from the start. The role of the computer expert is only to provide advisory services to help the managers to make best use of and sustain their information systems. Computerization is thus first and foremost a management issue!

James M. Ng'ang'a:

DEVELOPING MARKETING STRATEGIES FOR LIBRARIES, ARCHIVES AND DOCUMENTATION CENTRES

Introduction

Marketing is a subject of growing interest to all organisations including such non-profit ones as libraries, archives and documentation centres. Marketing is a management function. It should however be noted that marketing is not the same thing as selling.

By definition, marketing is considered as a planned approach to identifying and gaining the support of users and developing appropriate services in a manner which benefits the users and further the aims and objectives of information centres.

In order words, marketing serves as a spring board to gaining new users, to serve better existing users, to develop new services and to initiate as well as sustain a meaningful dialogue between the information centres and their users. Hence there is need to examine how the basic concepts of marketing are applied in practice to provision for information products and services being offered by libraries, archives and documentation centres.

Marketing For Information Establishments

Information services face many problems. At the present time the problems have to do with funding and priorities which lead to questions how we can change and where our future lies. These questions concern the information services relationships with funding agencies and users.

As already discussed, information is a valuable commodity and it is critical, to socio-economic, educational, cultural, scientific and technological development. The value of such a commodity is only realised when it is used and that to make use of information, potential users must be made aware of its existance. The purpose of marketing information services therefore is an attempt to make such services more responsive to:

- user needs and wants;
- improve publics' satisfaction with information service;
- to more effectively achieve the services objectives and goals.

The challenge to a manager of such services organisation is to be extremely sensitive and responsive to the clients needs, attitudes, expectations and complaints.

Structure Of Marketing

The marketing programme of an organisation consists of a broad range of decisions and activities which can be categorised as part of the market analysis and the market mix.

Market analysis: Research provides the organisation with information necessary to analyse decisions regarding specific structure of the market programme. Effective marketing requires prior analysis of the market - its structure and behaviours. It consists of determining the actual or potential users of the organisation.

The Marketing Mix of an organisation consists of product design, pricing, communication and distribution.

Product design considers decisions relating to the kinds of products or services the organisation offers to a target community to satisfy existing need or want.

Pricing covers decision related to cost, demand or competition considerations.

Distribution involves design of a satisfactory storage, distribution, delivery or dissemination system, keeping in mind that users' convenience has to be weighed against considerations of cost.

Communication includes advertising, publicity, personal contact, etc.

Marketing Strategies

The primary task is to identify the user groups and finding out all their information needs and wants. These needs and wants are to be met by appropriate products and services supported by right communication or promotion and made available at the right time and place. Even though these concepts are simple to learn, managing the Marketing Function demands more creativity and attitude judgement.

There are many publics which the information service is affected by, and which it affects including its own staff, the supplies of its material and the governing body.

A market is a public with which the information service wishes to do some kind of exchange. A market is usually seen as a particular group of people who share some common characteristics, and it is the nature of that characteristics which defines the market, as establishes a sufficiently large market for us to have a target.

A product is anything capable of satisfying a need, want or demand. This includes a service. Products exist to satisfy needs and should be defined according to needs they are designed to satisfy. In the context of information services and using the above definition, the product is not the book (the book is the medium and not the message).

Bearing in mind that information is used to help solve problems and that it is of value only if it is used, and further that to make use of information, potential users must be made aware of its existence, it is important that information managers should develop effective marketing strategies in order to maximise utilization of information products and services.

Planning The Marketing Programme

1. Re-examine the information centre's objectives - these should be seen in relation to the institutions goals and policies.
2. Set goals based on the institutions capabilities.
3. Identify potential/actual users and their needs.
4. Identify the services and products to be marketed. Determine whether any charges will be made and find out what price users are likely to pay.
5. Consider critical factors in your operating environment.
6. Survey available resources i.e. human, equipment, supplies, communication channels.
7. Plan promotional packages like communication channels (time table, what is required to establish these channels, financial requirements), assess likely impact and develop promotional materials.
8. Identify priority areas.
9. Plan users education programmes.
10. Develop evaluation mechanisms.

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James M. Ng'ang'a:

Financial Resources Mobilization And Utilization

Introduction

One of the major problems facing our national information system is lack of adequate financial resources for purchase of material equipment and employment of staff. Inspite of this problem, the demand for provision of effective information services has increased. We are daily being called upon to provide a wide variety of information services to a continuously growing user population. Indeed, if the plans we are proposing are going to be effected, there is need to increase financial allocation to information services. We shall explore ways and means of mobilisation of the needed financial resources.

Sources of Funding

Major sources of funding are:

- budget items assigned from the total institutions budget;
- donations for specific projects or purposes;
- Income generated from sale or provision of products and services.

Budget assigned from the institution forms the core of any information services funds. The information manager's challenge is how to maximize his budget from a source many other sections are competing to obtain a share. He should of course seek ways and means to get funding from other sources.

Mobilization of Resources

This is done through budgeting. An effective budgeting demands a clear understanding of the functions, objectives and goals of the information centre. The first step therefore is to establish clear objectives bearing upon the execution and subsequent results of each identifiable activity. Objectives should be both for short term and long term developments.

The second step is to seek for funds. It is advisable to study financial problems in such a way as to facilitate planning and budgeting supported by a valid cost analysis.

Budgeting

Budgeting is the process whereby an institutions plans are translated into itemized, authorized and systematic plan of operation, expressed in monetary terms for a given period. The primary purpose of budgeting is to provide an opportunity to examine the composition and viability of an institutions resource base for each programme and activity. There are two types of budgets:

- Operating budget which is a financial plan of current operations that encompasses both estimated revenues and expenditures for a specified period - usually one year; and

- capital budget, which outlines expenditure for new construction, major repairs or renovations and purchase of major items of equipment, furniture and basic stock collections.

The planning of an annual budget should take care of the following:

- salaries and wages
- acquisition of collections
- maintenance of plant and equipment
- acquisition of stores and stationery
- purchase of equipment
- cost of miscellaneous charges (electricity, postal, telephone, water, etc.)

A number of factors both internal and external have significant influence on the development and implementation of the budget. These include:

- Management style
- Types and degree of accountability
- Institutional politics
- National plans and network requirements
- Government policies and regulations
- User demands and needs
- Availability and sources of information resources and services
- Sources of funding
- Inflation
- Currency exchange rates.

A post performance review involves critical analysis of a completed budget period and focuses on the following elements:

(a) Good planning and budgeting require that all variations between the budget and actual expenditure and revenues during the period be analysed and that this analysis be used in developing subsequent budgets and plans.

(b) As part of the budget review, it is useful to examine the rational underlying budget revisions during the period and to assess their effect on subsequent institutional plans and budgets.

(c) The review should attempt to ascertain in whether the goals set for an institution and for each of its budget units were achieved during the budget period.

Unlike information services in developed countries, institutions in Kenya and other developing countries have very few sources where extra funding can be obtained. There are however, some inter-governmental and NGO's which can consider financial grants to libraries, archives and documentation centres. Such organisations include UNESCO, World Bank, and UNDP. Since there are inter-governmental organisations any applications for funds must be done through the relevant government Ministry. There are also foundations in many countries that could give financial assistance to support viable projects. One does need to know the area of interest of such foundations.

Other areas we may wish to consider is development of links with major libraries or archives in developed countries, and the possibility of establishing Friends of Librarys' Associations. We should also explore possibility of funding by major industrial and commercial organisations. Cost-sharing will no doubt be a way of raising funds especially in Public Libraries.

Identification And Preparation Of Projects

The project cycle consists of the elements identification, preparation, appraisal, negotiation, execution and monitoring, and retrospective evaluation. The first three stages of the cycle are the phase of design of the project. Once the project has been identified, a proposal should be written. The content of the proposal should include:

- Objectives
- Title
- Justification
- Structure, Institution, Body or Community of the project
- Results (quantified)
- Resources needed (distinguish national and foreign origin)
- Date of commencement of the project
- Budget (indicate local/institution inputs)
- Other projects in relation to this project
- Foreign source of funding envisaged.

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Cecile Wesley

COOPERATION AND RESOURCE SHARING

Introduction:

The need for cooperation has long been recognized. Cooperation is "as essential to a library as is water to a fish or air to a mammal" (1). Lack of cooperaion results in:

- isolation of libraries,
- neglect of certain areas of knowledge,
- fragmentation of resources,
- inadequacy of service,
- costly duplication of material.

Libraries and information centres began first to cooperate informally among themselves. In the past few decades, there has been no more urgency for, and progress towards formal cooperation. To clarify the distinction between the two:

- informal cooperation involves activities established on an occasional, unstructured basis, e.g. occasional reference assistance;
- formal cooperation implies contractual agreements, participation in a structured program with definite commitment, e.g. contract for cataloguing services.

Resource sharing represents advanced levels of formal cooperation which utilize computer networks and telecommunication technology. Resource sharing implies "a partnership in which each member has something useful to contribute to others and which each is willing and able to make available when needed." (2)

Rationale for Resource Sharing:

There are several reasons behind the concept of resource sharing:

- the expanding volume of publications and reading materials,
- budget constraints,
- increased cost of library operations,
- increasing demand of users,

coupled with

- concern for increasing the efficiency and effectiveness of information services,
- acknowledgement of the responsability to offer improved levels of service to users,
- willingness of librarians to communicate and cooperate.

Such situation, and favourable attitude of professionals results in libraries beginning to consider coming together in a cooperative system. This venture is successful if:

- there is a significant overlap in subject coverage,
- the levels of activity in the cooperating libraries are comparable,
- cooperation is administratively feasible,
- benefits of cooperation are visibly in excess of its costs,
- mutual benefits to all joining the cooperative project, where each library puts something in, thus feeling that the joint project is their own, and each gets something out, thus feeling that it is worth the effort.

Another development which promoted cooperation between libraries is the development of computer and telecommunication technology which facilitated interaction through integration of data bases and through fast communication.

Cooperation has also been encouraged by funding given by government or outside agencies for participation in cooperative activities.

Obstacles to Cooperation and Resource Sharing:

The following obstacles with regard to library cooperation and resources sharing exists:

- uncooperative behaviour of librarians,
- personal or professional rivalries,
- difficulty in adjusting to loss of ownership,
- unwillingness to abandon narrow institutional interests and loyalties,
- insufficient development of staff to carry out fruitful cooperative activities,
- dependance on outside financial support which does not continue,
- human shortcomings and lack of experience.

NDC Activities Promoting Cooperation:

1. Compiling union lists of periodicals.
2. Surveying libraries, documentation and information centres.
3. Surveying data bases in science and technology.
4. Holding conferences to find out users needs and to promote use of information services.
5. Holding meetings to discuss cooperative activities.

Areas of Cooperation with the NDC:

In the context of the national data bases which NDC is building and maintaining, the following are activities in which other libraries could cooperate:

1. Offering information on studies, reports, dissertations and conference papers produced by officials and researchers of parent organizations.

2. Providing NDC with copies of those studies when feasible.

3. Acting as a link between NDC and the clientele of their institutions taking responsibility for completing forms needed for maintaining the national data bases created by NDC.

4. Lending copies of documents unavailable to NDC for microfilming.

5. Utilizing the services and products of NDC.

Areas where NDC could support cooperating libraries:

1. Searching national data bases available to the centre.
2. Searching international databases available on CD-ROM.
3. Offering training and advice whenever feasible.

Goals of cooperation and resource sharing:

1. Maximize use of available resources.
2. Increase accessibility to library services and materials.
3. Provide more services to more users.
4. Eliminate unnecessary duplication of resources.
5. Coordinate acquisition policies and long-range library development
6. Development of compatible machine systems.
7. Provision of easy and rapid communication systems.
8. Provision of shared storage facilities.

Forms of Cooperation:

Cooperative agreements are formed by:

- type of library-such as public, academic, or special libraries;
- form or medium of record - such as technical reports, motion picture films or journals;
- discipline - such as medical, agricultural or chemical information services;
- type of operation or service such as interlibrary lending, cooperative cataloguing, union catalogues and lists, shared resource development and use, duplicate exchanges, cooperative storage, cooperative mechanization projects such as establishing a common machine database of bibliographic records.

Cooperative and Resource Sharing Activities:

Interlibrary lending, the most common form of cooperation between libraries, is intended to make available for research and serious study library materials not in a given library. A lending system, as Nortier describes it, "is the only means of enabling institutions to have temporarily and quickly what they cannot have or do not wish to have permanently" (3). It should be observed that interlibrary loan codes stress the responsibility of each library to develop collections adequate to meet its normal needs. Danton asserted that "... no library should expect another to bear the burden of its needs except for the rare, the unusual, and the relatively little used" (4).

Interlibrary lending require the following:

- Standard procedures and forms for transmitting requests for loans to ensure that valuable staff time is not wasted, and requests are not delayed or denied for lack of sufficient details;

- Tools for bibliographic access such as union list of periodicals and union catalogue of books which provide information about the resources of cooperating libraries. In addition to using such tools as locating advices for interliberary loans, they are valuable in coordinating acquisition programs and in bibliographical activities. They guide librarians to plan more complete coverage of resources and to avoid unnecessary duplication as well as unnecessary acquisition of low-use items already owned by cooperating members. Union lists of serials have in general been more successful than union catalogues of books.

Cooperative cataloguing utilizes a computer network system which allows member libraries to access, search and add to MARC-based on-line bibliographic database. Cooperating centres are required to use MARC records in cataloguing.

Cooperative development and use of a national or specialized data base. This form of cooperation requires the use of compatible hardware and software. NDC is developing a national data base which uses Unesco software micro CDS/ISIS and IBM or IBM compatible computers. Cooperating centres should use the same software and hardware.

Cooperative storage is another form of cooperation. Centres for this purpose accept and reserve material which is so seldom used that its retention on the shelves becomes uneconomical.

Coordinated resource development is another form of cooperation, the most obvious benefit of which is the avoidance of costly duplication of expensive lesser used materials, which at the same time assuring that these materials will be readily available within the country.

Sharing of professional experience and talent, through workshops, training and newsletters, is another form of cooperation and resource sharing.

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Cecile Wesley

INFORMATION NETWORKS

What is an Information Network:

An information network may be defined as an organized grouping of information centres and services for the purpose of transferring or promoting the transfer of information, not necessarily making use of informatics, although many information management and dissemination functions can benefit greatly from the use of appropriate information technologies. Computer networks are a type of networks where a group of computers are physically linked in order to exchange data. (1)

Benefits of Information Networks:

1. Provide mutual support to participating units.
2. Reduce unnecessary duplication.
3. Meet the different and complex information needs of users.
4. Provide means for improving cooperation.
5. Mobilize network resources for the benefit of each unit.
6. Maximize accessibility, sharing and use of available resources.
7. Achieve common objectives unattainable by any centre alone.
8. Build up national capacity for information provision in place of the isolated, even competing, and duplicate stores of documents.

Activities Promoting Networking:

1. Conducting joint studies of mutual importance.
2. Cooperating in the identification, design and execution of cooperative projects.
3. Preparing publications such as directories, union lists and newsletters.
4. Conducting courses, seminars, and group training sessions to teach skills needed for cooperative projects.
5. Convening technical meetings, discussions and workshops.

6. Providing rapid communication systems among network members.
7. Facilitating exchange of information, publications, ideas and experiences.
8. Developing compatible computer systems.
9. Co-ordinating acquisition policies.

Basic Considerations for Developing Networks:

1. Structure showing the required support at the national level, as well as responsibilities of the network components (e.g. in the network, and a network committee).

2. Planning and identification of priorities on the basis of surveying resources and identifying needs.

3. Formal Agreements to ensure commitment to assigned responsibilities.

4. Linkages and communications between the components of the network which may take many forms, some indirect-through mail, newsletter, exchange of publications. Direct contacts can be made through person-to-person visits, meetings, workshops and training sessions.

5. Funding - securing additional resources for two major areas:

   - network operations (meetings, workshops, short-term training associated with network activities, network publications);

   - strengthening librtaries so that they can participate in network activities.

6. Standards - agreement on using common standards for bibliographic control, for hardware and software to ensure compatibility and convertability which would facilitate bibliographic communication.

7. Legislation - formal agreements, or by-laws to ensure the required level of cooperation and coordination.

8. Adequate resources - participants in a network should already be capable of meeting the basic, recurring needs of their primary clientele. A network supplements, and does not duplicate or replace, local library service.

9. Evaluation of network activities: successful cooperative programs must produce measurable changes such as:

   - staff functioning more effectively;
   - access to material is improved;
   - staff retrained to make maximum advantage of cooperative programs;
   - collection and service policies revised to reflect the new program;
   - operation costs stabilized or reduced;
   - new services introduced or existing services expanded.

Ways to Ensure Optimum Cooperation:

1. Sharing - each unit should have something useful to give to others. It is not "I join so that I get, but I give so that I receive.

2. Two ways cooperation - it is a shared responsibility where each contributes to the network.

3. Mutual benefits - both for librarians and users e.g. skills, knowledge, access to information ... etc.

4. Start network with a small number of cooperating centres which agree to cooperate on a formal basis to accomplish specific services and tasks.

5. Agree on the objectives of the network and the joint action necessary to achieve those objectives.

6. Involve cooperating centres (through network committee in preparing a written work plan and getting their commitment for its implementation.

7. Enhancing the effectiveness of cooperation through formalization of relationships which also allow for flexibility.

8. Securing adequate resources, administrative capability and efficient communications.

9. Provision for legal responsibility for the realization of the network.

10. Organizing training activities needed to implement network programs and procedures adopted for the network.

11. Commitment to network standards, procedures, policies and activities.

12. The key of the success of networks lies in the participants themselves, in the support they provide, in their willingness to surrender a certain amount of self-sufficiency, and in their determination to make the program succeed.

A Network in Operation:

CEHANET (Centre for Environment Health Activities Network) is an example for a regional network in which Sudan participates by way of inputing to the network, using its services and developing it. CEHANET is characterized as a decentralized, mission-oriented regional information system:

- Decentralized network is one in which several functions are shared among several network nodes.

- Mission-oriented being interdisciplinary information system with a specific objective; the urgent improvement of water supply and sanitation services and environmental health conditions in the region.

- Regional-Eastern Mediterranean region where similarities between many countries of the region exit.

CEHANET Structures:

1. The network is managed and coordinated by CEHA in Amman, Jordan. It operates through a network of Environmental Health institutions in the Region who express their willingness to cooperate with CEHANET, make use of its services and contribute to its activities.

2. National coordinating centres mainly responsible for:

- Forming and coordinating a national subnetwork.
- Identifying and selecting documents produced in the country within the scope of the network.
- Obtaining relevant documents produced in the country.
- Creating and maintaining EH national database and making it available to CEHA.
- Disseminating the products and services of the network.
- Provide training for EH information personnel in CEHANET procedures.
- Sensitize users at the national level.

3. Collaborating centres selected on the basis of:

- Availability of personnel specialized in EH.
- EH activities constituting part of the institutions' total orientation.
- Availability of a library/information unit.
- Institution should be capable and ready to commit itself to network requirements, standards, procedures, policies and activities as the basis of cooperation (2).

How did the Network develop?

Appraisal missions were carried out in countries of the region where cooperating centres were identified. A consultative meeting was held where the creation and development of the network was discussed. Network tools were agreed upon and prepared such as the operating manual, thesaurus ... etc. The software to be used was agreed upon which is Unesco CDS/ISIS.

A memorandum of understanding was sent to national focal points among them the National Documentation Centre of Sudan. Having agreed on the terms of the memorandum, it was signed as indication of commitment to network activities, standards and procedures. The National Documentation Centre identified potential collaborating centres, wrote to them inviting them to join the network. In May NDC will conduct a national course on CEHANET procedures to information personnel from these institutions.

A network is successful if the participants wish it to do so.

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Cecile Wesley:

NATIONAL INFORMATION SYSTEMS

The Need for National Information Systems:

1. Information is a national resource - to take full advantage of this resource a properly structured information system is required.

2. Information sources and services are dispersed in many libraries, documentation and information centres. This dispersal calls for a coordinated information system.

3. Information needs are varied and complex. No one organization, however powerful, can serve all user's needs. A national information system is potentially able to meet the various information needs of a country.

4. There are restrictions inherent in the concept of institutional property of information resources. A national information system increases accessibility to information.

5. Information services are becoming exceedingly expensive. A national information system, based on efficient cooperation, can promote overall economy.

6. Many international information systems have been developed to facilitate access to information available internationally. A national information system would facilitate linkage and utilization of international information systems.

Definition:

A national information system is basically a network of existing information resources, together with new services for identified gaps, so co-ordinated as to reinforce and enhance the activities of the individual units and thus enable specific categories of users to receive the information relevant to their needs and abilities..(1).

Design Elements of National Information Systems:

1. Analysis of the information needs of users.
2. Analysis of the present situation of library holdings and information services.
3. Estimation of manpower needed.
4. A design for the provision of space, material and technic.
5. A policy statement covering legal and economic issues.
6. Planning of financial resources for the realization of the system.
7. Creation of an activation mechanism such as the establishment of a focal point to be responsible for questions of policy, planning and co-ordination at the national level.(2)
8. Identifying libraries and information centres with a potential for becoming national subject and regional resource centres based on their size, location, strengths of their resources, a substantial and continuing financial support, the presence of trained qualified professionals on the staff and willingness to provide the required service nation-wide.

Basics for a National Information System:

1. Legislative base.
2. Managerial skill.
3. Economic capacities.
4. Policy statement providing a set of principles for guiding the design, development and implementation of a nation-wide system of information services.
5. A national plan for developing the information sector.

An example of an operational national scientific and technical information system is the Egyptian National Scientific and Technical Information Network (ENSTINET), which was established in 1980 as a result of a project to develop a national scientific and technical information system in Egypt. The project was a joint effort of the Egyptian and US governments.

A five-year plan of the project consisted of extensive surveys, interviews, literature analysis and workshops whose purpose was to make a comprehensive assessment of the information scene.

Based on the outcome of the analysis, a system design study and an implementation plan were proposed to the government of Egypt. The implementation of this design extended from 1982 to 1986. Two of the main functions of ENSTINET are:

- to organize the Egyptian scientific and technical literature by developing and maintaining national and sectoral data bases.
- to facilitate access to recorded knowledge in electronic or traditional forms, whether located in Egypt or abroad.

Basic Principles on which ENSTINET is established:

ENSTINET has been established as an independent, autonomous organization. It has a decentralized structure based on the establishment of:

1. autonomous information nodes which have full freedom within ENSTINET framework, to set up their structure and operations to suit its specific users' needs. The nodes represent:
   - sectoral information nodes representing five socio-economic sectors (agriculture, energy, industry, medicine and health care, science and technology). These have increased to seven nodes, presently, including reconstruction and housing as well as social and criminological research. It is also planned that other socio-economic sector nodes will be created, e.g. education and planning. The selection of ENSTINET's socio-economic sectors was guided by Egypt's five-year plan.

- Geographical regional nodes, multi-disciplinary in nature, have been established in six universities in different regions (Alexandria, Suez Canal, Assuit, Mansours, Tanta and Zagara).

2. a coordinating body (focal point) created to:

   - manage and coordinate the activities of the network
   - promote the use of standards within ENSTINET
   - secure compatibility among the nodes
   - develop principles and guidelines
   - represent ENSTINET as an independent information agency with its own budget.

Criteria for Selecting ENSTINET Nodes:

1. Willingness of the organization.
2. Attitude towards public information service.
3. Past experience with information industry.
4. Ability to host the node.

Activities Carried Out Centrally by the Focal Point:

1. Technical and marketing support.
2. Publishing.
3. Training.

Services of ENSTINET:

1. Creating and maintaining national databases (Egyptian sectoral bibliographic database, the union list database, Egytian journal database, scientific organizations and asso ciations database, who's who in science database.

2. Electronic database searching:
   - retrospective database searching,
   - selective dissemination of information.

3. Document delivery services.

4. Publishing services of:
   - a national abstracting journal in science and technology based on sectoral bibliographic databases,
   - a quarterly newsletter.

5. Electronic Mail - which allows organizations or individuals with communication facility to exchange messages and documents with any other ENSTINET members.

6. Electronic Bulletin - which is a means of electronic broadcasting of news, announcements of events and organizational activities.

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Getachew Birru

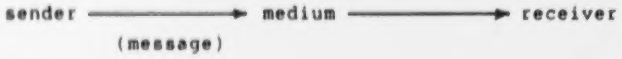
COMMUNICATION IN LIBRARIES

Principles of Communication

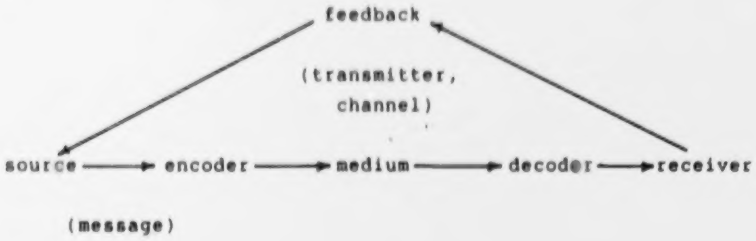
Communication may be defined as the transmission of information by an individual or group of individuals to another individual or group of individuals. An example is someone conversing with someone else at a remote location on the telephone.

In the above definition, one can identify four elements that are integral parts of the communication process. One of the elements is the person or persons transmitting the information, and second element is the individual or individuals receiving the information, referred to as the receiver or audience. The third element is the information that is transmitted by the communicator to the receiver, known as the message. The fourth element is the means by which the message is transmitted, such as the telephone as in the case of the above example, and is referred to as the medium.

A number of models have been designed to explain the process of human communication, and the four elements indicated above constitute the simplest model:



A relatively more complex model is shown below:



This model consists of six elements. According to this model, every communication starts with the creation of an idea or ideas to be transmitted. The part of the human body that is responsible for the creation of the idea, the brain, is the first element in the model and is referred to as the source. The mental-level idia is then transformed into a form that the audience can recognize it. In the case of a speaking-listening mode of communication, the part of the body that is responsible for this function is the speaking mechanism, and constitutes the second element of the model, referred to as the encoder. The encoded message, which is in a form of sound wave, or transmitter, then passes through the air, or channel to reach its destination. The transmitter and channel together constitute the third element in the model, which is the medium. Having passed through the medium, the message then reaches its destination, where it is decoded by the hearing mechanism. The hearing mechanism, or the decoder, thus constitutes the fourth element. The decoded message is then forwarded to the brain, which attributes meaning to the message. The brain of the person receiving the message is this the actual receiver of the message, and constitutes the fifth element in the model.

Every communication situation, regardless of the mode of communication (i.e. speaking-listening, or writing-reading, or visualizing-observing) used, can be explained in terms of this model.

As the arrows in the diagram above indicate, the message first travels from the source to the receiver. There is, however, a return way. In response to the message received, the receiver responds to the source. This response which the receiver of a message makes to the source is referred to as feedback, and constitutes the six element. The feedback, which may be either positive or negative, is important to the source.

Another concept in the model is what is known as noise. Noise is anything that disrupts the free flow of messages from the source to the receiver and from the receiver back to the source. It can occur at any stage in the model, but usually it strikes at the medium or receiver stage. A communication situation that is free from noise is said to be of high fidelity.

Message versus meaning

Message and meaning are often interchangeably used. There is, however, a difference between the two terms in communication. In any communication situation what is transmitted from the source to the receiver is message and not meaning. Meaning is not transmittable, because it is not in the message, it is what the receiver of a message gives to that message based on his prior experiences, motivation and present circumstances. A communicator, therefore, must see to it that the receiver has the experience required to attribute the desired meaning to a given message.

Purposes of communication

Communication is vital in the development process, be it economic, cultural, political or other. It is the basis for interaction between and among individuals, orgaizations, national, etc. In every communication situation, there is a purpose of objective to be achieved. The purposes of communication are:

- to inform or educate
- to persuade or to change attitudes, and
- to entertain.

These purposes are not mutually exclusive. A communicator aiming at changing a certain attitude held by an audience may at the same time be informing and/or entertaining.

Factors affecting communication

There are four major factors that determine communication effectiveness or high fidelity. The factors, which are important in both the source and receiver, are the following:

1. Communication skills: This refers to the ability to encode messages well. A communicator needs to speak or write clearly to bring about an understanding of the intended meaning by the receiver of the message. The richness of the vocabulary of both the source and receiver is an important factor in the communication process.

2. Attitudes: The attitudes of both the communication source and receiver affect the ways in which they communicate. Attitudes can be looked at from three aspects:

a) One of these is the attitude that the source has toward himslef. How he feels about himself affects the way he communicates with others. This is also true on the part of the receiver of the message. How he feels about himself affects how he receives messages.

b) The second aspect is the attitude that the source has towards the receiver. The receiver usually gets an impression of the source's attitude toward the subject that the latter addresses. His attitudes come through his message. The attitudes are in most cases positive. If the source does not believe in the value of his subject matter, the communication situation is unlikely to be effective. Similarly, the attitude that the receiver has towards the subject matter affects the communication process.

c) The third kind of attitude is the attitude that the source has towards the receiver. When the members of the audience realize through the source's message that he has a favourable attitude to them, they are likely to be much less critical of his messages, much more likely to accept his messages.

3. Knowledge level: The amount of knowledge that the source has about the subject will certainly affect his message. The more he knows about the subject matter the better. There is, however, concern that if one is overspecialized, his communication skill are likely to be too technical that the receiver might fail to understand him.

4. Social-Cultural system: The position that the source holds in a given social cultural system is an important factor that affects communication.

Steps in communication

The following steps have to be followed in order to bring about effective communication:

1. Attention: The communicator must first of all have the attention of his audience. He must communicate in such a way that the audience can listen to what he has to stay of read what he writes.

2. Understanding: The communicator must present his material in such a way that the audience can understand it.

3. Acceptance: The communicator must present his material in such a way that what he presents will be accepted.

4. Action: The result of a successful communication is the taking of action by the audience as desired by the communication. The communicator must, therefore, communicate in such a manner as the audience will take the appropriate action.

The Role of Communication in Library Management

The administration of any organization, including libraries, can be accomplished only through communication. Communication is the most important toll for getting things done. It is the basis for understanding, for cooperation, and for action. The effectiveness of administrative communication within a library determines the effectiveness of the administration of that library; hence, a library with poor communication is believed to have poor administration, and that with effective and efficient communication, effective and efficient administration.

Communication is the means by which the library administration can have the staff to work closely with it in the formulation of policies and programmes which will enable the library to achieve the major objectives of service to the user community. The ideas, requests and instructions to be carried out by the staff must be clearly communicated to them, so that the level of performance can be obtained. Hence, the library administration is almost totally dependant upon communication for the execution of its policies. Without communication the staff may develop a distorted view of what others, including the administration, are doing, and such views are likely to result in negative attitudes, which in turn clearly interferes with communication.

The library administration carries out communication in four directions: up to a superior authority, down to subordinates, across to librarians in peer positions, and out to the library users, using a different approach in each case.

1. Up to a superior authority: The library administration may have to communicate the library's needs to a governing body that, in many instances, has little understanding of, or even interest in, the operations of the library. The librarian must have such communication skills that would enable him to create understanding by translating the needs of the library into terms that will have meaning for his listeners.

2. Down to subordinates: The librarian may have to give instructions to his subordinates in order to get things done. Even in such communication situations, communication skills and techniques would be useful to bring about effective communication. One might assume that in such superordinate-subordinate relationship, where there is a common vocabulary of librarianship, comprehension would be automatic, but here again a bridge of understanding may need to be built, especially when the purpose of communication in concerned with administrative duties and responsibilities.

3. Across to librarians in peer positions: Here again, it is not uncommon to find that librarians operating in a supervisory capacity on the same management level are not communicating as well

as they should. If they were, we might have fewer instances of conflict of interest between departments.

4. Out to the library users: Communication in the library system is not limited to internal communication. There is for libraries that most important professional role - direct communication with the user community in the effort to provide information service. Here, we must not only be understanding in our communications with the library user but also especially careful about understanding exactly what it is that he needs to know. One of the most important measures for the effectiveness and efficiency of a library is the ability or skill of the staff to interrogate a library user in order to help him find the information he needs, or find it for him, and to do this without annoying him. Therefore, communication is also the work that the library administrator and the library staff together perform in order to create understanding between the library and the users.

Communication in the context of the library can thus be defined as the work a library administrator performs to create understanding between himself and the organization of which his library is a part, between himself and his staff, between the individual members of the staff, and between the library staff and the user community.

Making communication effective

Sound ideas and wellreasoned decisions only become effective when transmitted clearly to those responsible for the corresponding action. The librarian must be clear as to the main purpose of the message to be transmitted, i.e. analyze the fundamental aim to be achieved. He must consider both the content and attitude of the message with the objective of presenting the right tone, the necessary information and sharpness of focus.

The timing of the message is often very important. Premature communication will be seen by the recipient to be something which can be put aside and probably forgotten. Delayed communication may be resented in that it does not allow sufficiently for reaction and adjustment.

Theoretically, at least, no matter what is said or how it is said, no one else gets the meaning intended from the words used. However, it is easier to understand another in face-to-face discussions, staff meetings, special assemblies and conferences can be more effective than communicating through the written media, such as staff newsletters, library bulletins, and circular letters.

Conclusion

The library administration should see to it that there be effective and systematic communication between the staff and the administration in matters involving the library's policies and programmes. It should create the appropriate forum to explain matters of policy, to discuss professional problems, new trends, developments, techniques and procedures; to consider matters involving the staff and its interest; and to promote progress in the library profession. Effective and systematic communication is also essential between the library staff and the user community, as otherwise the library will be a repulsive place for the users, and will discourage potential users.

The attitude, on the part of the administration, of wanting to discuss with the staff, of giving information before crises arise, and of never believing that everything that is written is communicated, are determining factors for successful communication.

The consequences of ineffective and inefficient communication relationships, both between the administration and the staff and between the library and the user community, are beyond measure. The remedy, of course, is for everyone in the library to improve his personal skills in communicating and receiving communications.

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Getachew Birru

STRATEGIES FOR IMPROVING UPON REFERENCE SERVICES

The Concept of Reference Services:

The primary functions of a library are to acquire information sources, organize the sources, and disseminate information. Reference service is the main means of carrying out the dissemination of information. More specifically, it is the effort that a library puts in to provide the right information to the user at the time it is required. In reference services today, the reference unit outreaches its potential users rather than playing a passive role of waiting for the user to come to the library seeking information.

With the increasing proliferation of literature in the world, it would indeed be difficult for the user to find the information he needs. Modern techniques of information handling, however, have greatly enhanced the reference function of libraries and other information systems.

Type of Reference Services:

Reference services in a growing number of libraries of today are a mix of traditional (conventional) and modern, computer-based types. The services could be based on the collection of printed reference works, such as indexes and abstracts, and the findings tools of the library, such as the card catalogue, visible index, etc. and/or using online remote, international databases, CD-ROM-based databases or databases compiled in-house. The major types of reference services are the following:

- Quick reference service, i.e. answering specific factual questions, such as "what is the two-letter code for the state of California", or "what is the melting point of...?" (Manual or computer-assisted)

- Literature searching (manual or computer-assisted)

- Current Awareness and Selective Dissemination of Information Services (commonly computer assisted)

- Compiling bibliographies (manual or computer assisted)

- Interlibrary loan.

Infrastructure Components of Reference Services:

The main infrastructure components that must be ful-filled in order to run reference services include the following:

Information Sources: These are the range of materials in the library's collection - books, periodicals, indexes and abstracts and other reference works. The size and quality of the collection has a bearing on the quality of service. If the collection is below a certain minimum size and relevance, the reference service is unlikely to function effectively.

Human Resources: Qualified manpower is required to carry out the range of reference services outlined above. Such manpower would be expected to know, in depth, the range of reference works in the library's collection and about the information sources of other libraries within the country as well as the information systems and services in the region. The reference staff should also have a good working knowledge of literature search techniques.

Information Technology: The development of new information technologies has drastically changed the traditional ways of information handling. It has enabled information systems to use storage space more efficiently and to distribute information faster, more economically and with greater benefits to end-users. Those institutions and organizations which make use of the new and emerging information technologies will experience the power of information, and those which do not, will, of course, find themselvews at a serious disadvantage.

The availability, in a library, of a microcomputer with the associated peripherals and the relevant software today is by no means a luxury, even in the smallest library.

Improving Reference Services:

For an information system to be effective in the sense of filling the information needs of users, it must achieve certain qualities, some of which are as follows:

- a wider range of information sources and information types - bibliographic, factual, numberical, images, hypertext, etc.;
- access to the wide range of information available;
- ease of use of the information system, through user interface or tutorial assistance;
- comprehensiveness, relevancy and timeliness;
- reduced cost, to both the library and the user.

The Need for Networking and Resources Sharing in the Region:

With the meagre and ever shrinking financial resources available to libraries in Africa, it is simply unlikely for the libraries to develop the kind of information sources that would enable them to render effective reference services to their users.

A logical course of action to be taken by libraries in the region is to establish formal cooperative schemes of networks and actively engage in the exchange of information.

There are, however, certain minimal conditions that must be met by individual libraries to enhance networking and resource sharing. Libraries in countries within close proximities could form a network and draw up joint acquisition policies to avoid, for instance, duplication of expensive information sources, with some libraries giving greater emphasis on collection development in certain subject areas, than others. Secondly, these libraries could undertake cooperative bibliographic control activities, ranging from the preparation of union lists to holding informal regional meetings of staff.

Such cooperative undertakings could be greatly enhanced by the use of the information technology, particularly CD-ROM technology.

The Role of CD-ROM Technology in Library Networks and Resource Sharing:

Today the success of any organization depends on the effective use of information. Institutions and organizations in the developed countries have, for over two decades now, been greatly previledged as regards literature search and retrieval of textual information, in that they have been readily using international and/or commercial computer-based bibliographic and text databases. By accessing these vast information storage facilities online from a remote location over international telecommunications, users retrieve required information at high speed. Such databases have indeed made it possible to put information at the finger tips of users.

On the other hand, for reasons of high costs and technical problems, the use of such remote international databases online is not yet a reality or feasible in most developing countries, including ours.

However, thanks to the new and exciting technology of CD-ROM, which is a high storage-capacity optical disc, a growing number of the large and reputable bibliographic database can now be made available in-house for searching the world's output of literature, using a microcomputer system. With the immense storage capability of CD-ROM and searching power and flexibility of modern personal computers, information searches, previously possible only through telecommunication facilities, can now be undertaken inhouse simply and relatively cheaply.

With such huge databases (containing both the basic records and the inverted filed) stored on a microcomputer with CD-ROM, it is to be expected that the reponse time is somewhat slower, but the CD-ROM version has a number of other advantages over both searching of databases on remote host computers and the use of printed sources. The main advantages are the following:

- predictable costs compared with paying online connect time charges;

- search results are much easier to comprehend than the printed format of most large reference works and bibliographies and the presentation achieved by even the best online library catalogue. Due to the absence of telecommunications, does not require an intermediary, and, hence, inexperienced users of online services are more likely to use them, with the opportunity to browse and repeating a search as many times as desired;

- the systems are simple to use, enabling the user to obtain results almost immediately;

- the retrieval system is as powerful as the online remote databases employing Boolean search techniques, which enable the combination of terms and that of the results of several searches and this provides enormous capabilities;

- enables to print out or download search results, which is much faster than copying from reference books;

- compared to printed publications CD-ROM takes much less storage space.

CD-ROM enables to transfer machine-readable records to a local retrieval system on a larger computer. For example, using the Cataloguing Production System known as **BiblioFile**, a library could perform a retrospective conversion of MARC records to form a database for an online catalogue at low prices.

With the advatages of the CD-ROM technology enumerated above, CD-ROM could play an effective role in networking and resource sharing activities in libraries of the region. As mentioned above, the major libraries that would join the network could specialize in certain subject areas with regard to the acquisition of large bibliographic databases, so as to have a good number of such databases available at the various libraries. With such an arrangement, a library which does not have such a database, say for example MEDLINE, could call upon the library that possesses it for literature search services in biomedical fields. The search results could be sent in either a form of a printout or downloaded on a diskette.

The Experiences of Addis Ababa University Libraries in the Use of CD-ROM Databases:

The Addis Ababa University Library acquired four microcomputer systems in 1988 and entered subscriptions for six of the well known bibliographic databases on CD-ROM, namely, MEDLINE (biomedical sciences), ERIC (education), NTIS (Science and Technology), LIFE SCIENCE COLLECTION (life and biosciences), SCIENCE CITATION INDEX, and SOCIAL SCIENCE CITATION INDEX, with the stater sets going, in some cases, as far back as the early 1960's.

These databases have enabled the library to have the key to most of the world's output of literature and have been rendering online search document delivery services to the university community, which consists of 14 faculties and 87 academic departments, almost on any topic of their interest.

The list of citations, including abstracts, obtained through a search are issued to the researcher either in a form of a computer printout or downloaded on a floppy diskette.

The library also acquired a substantial quantity of BLDSC photocopy coupons in order to obtain a copy of the required journal articles in the event the journals containing the articles are unavailable locally.

These services are running reasonably well and the faculties are pleased with them. There are, however, certain problems encountered, such as the researchers wanting to conduct their search themselves, since there is only one FTE staff serving as an intermediary.

With the wide range of such reputable databases, the Addis Ababa University Library is in a good position to participate in network and resource sharing undertaking, provided formal arrangements for such regional activity can be worked out with potential partners.

Conclusion:

Today the success of any organization is dependant in the effective use of information, and libraries must live up to their expectation in the provision of accurate and timely information to their users.

In this regard, improving the reference services should be a major area of concern in libraries. Improvements that need to be made in a reference services system are many and varied, but the following constitute the major features of an efficient and effective system:

- Availability of a wider range of information sources and information types - bibliographic, factual, numerical, images, hypertext, etc.
- Accessibility to a wider range of information by users;
- Ease of use of the system;
- Comprehensiveness, relevancy, timeliness;
- Reduced cost to both users and the library.

Introducing CD-ROM technology in reference services can help in achieving a system with all of these features, and as a result, the library would be in a position to serve its readers efficiently and effectively.

The acquisition of a microcomputer system together with a CD-ROM and a couple of the major bibliographical databases would enable a library to participate in a regional network and resource sharing undertaking, thereby improving its capability to serve its users even better.

Promotion of CD-ROM technology, educating users, and training librarians and other information personnel in the use of this dynamic tool will enable the library to realize the important role that the technology can play in information handling and exchange.

Augustes Musana

CURRENT AWARENESS SERVICES AND SELECTIVE DISSEMINATION OF INFORMATION

Introduction:

This paper is intended to serve two purposes:

1. Sensitize those of you here who have not yet given enough consideration to starting a selective dissemination of information services to your users.

2. To enable those who have already evolved an SDI system to reflect on the performance of the system, identify constraints that might be affecting the efficient and effective operation of the system and endeavour to seek improvement in its operation.

We are all aware, I hope, of one of the universal problems that anybody who is interested in information faces: the increasing proliferation of literature. Day in day out so much is being published. Some may be in support of, or broadening on the horizon of a theory. Some may be attempting to disprove a theory. And so forth. All of it, whether for or against, are adding on to an already exploding situation.

For the developing world the problem is worse. We have to depend mainly on overseas suppliers for obtaining the information we require or need. Given the exploding situation referred to above, an assumption has to be made that we have inexhaustive foreign exchange to be able to obtain all we want. Unfortunately, the truth of the matter is that we will be very lucky to obtain even 5% of the available foreign exchange, whether at national or institutional level.

Besides, as a result of an historical background we are confined to either English or French sources of information. Should we rightly assume that nothing valuable gets published either in

Chinese, German, Russian, Polnish, to mention only a few?

Furthermore, because of the dependence on the developed world for most of our information requirements we get most of information resources very late. It is not surprising to find a library in any of the countries represented here getting their copy of the 1984 Ulrich's International Periodicals Directory (if they get foreign exchange to renew the subscription) one or two years later.

So, our user, whether a decision maker, planner or researcher engaged in intellectual pursuit, is confronted with an agonising problem. Decisions, plans, research conclusions, arrived at on the basis of inaccurate, irrelevant, inactionable and imprecise information could prove too expensive to a researcher's or chief executive officer's career.

CAS/SDI

Current Awareness Service (CAS) is an attempt to try to find solution to some of the problems raised above. It is a system for notifying a user(s) of an information service on a periodic basis of the acquisition of information which should be of interest to the user or group of users. It is a rebutt to the traditional or passive approach (wait for the user to come for it), instead of actively getting involved in taking the information to them.

The Selective Dissemination of Information or SDI service is a highly refined and personalized form of current awareness services. Historically, it originated about the late 1950s. The system assumes that the information manager knows and fully understands user's information requirements, needs of demands and that the latter has full confidence in the information manager to the extent that he is prepared to delegate information searching to him. As indicated above the essential elements of SDI system include:

- selecting and acquiring documents for input;
- indexing of the incoming documents;

- users identification and selection;
- interest profile design;
- matching of the documents against the profiles;
- production of the output (abstract, full text, citation etc.);
- transmission of the output;
- feedback; and
- evaluation and modification of the system.

Designing User Interest Profiles

A User Interest Profile is "a list of index terms selected to indicate the area of interest of a user of an information service, used in the selection of documents in SDI(1). The process of designing user interest profiles is as follows:

- identify the user;
- conceptualize the need and demand for a system of selective dissemination of information;
- explain the user(s) what SDI is and the advantages accruing to it;
- request the user(s) to present his/her subject interest(s) in as specific terms as possible;
- match the subject interest(s) against the vocabulary used in indexing the information sources;
- communicate the reformulated profile to the user;
- store the profiles; and
- evaluate the profiles store regularly and irregularly (on the spot or unannounced check). This is a very important sub-process. Given that the knowledge is continuously broadening and user information requirements changing as job scopes and interests change, it is important that the profiles are reviewed accordingly.

The success of the process depends a great deal on the degree of rapport or understanding between the information manager and the user, and a clear undertanding by the former of the field(s) of the latter. In designing a person's profile it is important to consider not just the professional aspects but also personal and job-related information needs.

There are the following methods of obtaining information for user profiles formation:

1. The interview: If handled well this would appear one of the most effective means for getting the user to crystallize his information requirements. In planning the interview the information manager should make sure that he/she
   i) fully understands the language being spoken by the interviewee
   ii) arranges an informal introductory encounter.

2. Paper simulation: This method assumes that the information manager understands the information requirements of the user. He, therefore, proceeds to structure or formulate profiles for the individuals. On arrival of current materials he sends them to the respective user. This should trigger reaction from the user to formalize the SDI system.

3. Brainstorming: The users meet in a quiet place and generate ideas in some sort of order. Notes are taken and later on are processed and distributed to the users. This would appear to be more suitable where a group profile is being formulated.

4. Direct observation: The information manager might have to formulate some sort of user profiles based on the observations he/she may have made over time. This is to some extent related to paper simulation.

5. Questionnaire: These are useful especially in large organizations with departments or branches in different locations. The questions should be very clear and direct. The questionnaire should be as short as possible. This might improve on the return rate.

6. Critical incident technique: Using interviews and questionnaires the information manager might be able to identify outstanding areas or incidents, effective or ineffective, which were due to availability or non-availability of a sophisticated system of getting relevant information to the right user at the right time on the basis of well formulated user profiles.

What should be included in a user profile? As mentioned earlier on the profile should include interests that are of the following nature:

- personal
- professional
- job-related.

The user should be asked whether he/she would like for instance, his/her profile to include names of institutions whose documents he/she would want to receive automatically, and/or instructions to the effect that major items cited in a document(s) matching with the profile should be sent to him/her automatically.

Profiles could be stored alphabetically both under the users' individual names, and descriptors as indicated by the users.

CAS/SDI Methods:

1. Journal circulation: The users notify the information manager what journal titles they would like to scan. The manager orders the names on a label which is then pasted on an issue of a journal as it arrives. It is then circulated according to the list. Problems: possible loss of the journal, or: the user whose name is first on the list may tend to keep the journal longer. As a result the level of currency tends to get low for the names on the bottom, or: it is highly generalised i.e. it may not prove time saving for a user who is looking for highly specific data or: the method removes the current issue from the service, thereby disadvantaging other users who would like to come and browse within. One possible solution is to make sure that the journal is returned to the information manager before it is passed on to the next user on the list. Even this is very time consuming.

1. Contents Pages: The Information Manager gets requirements from the user. As soon as the current issue of a journal arrives the Contents Page is photocopied and distributed to the various users. This avoids sending out the journal for very lengthy pe-

riods. This system, too, requires very little time. It is, however, based on the assumption that a photocopier is readily available within the organization. Using outside photocopying facilities could prove too expensive. Again like Journal Circulation it requires very little professional input. Problem: Does the title really say what the article is about, does it help the user?

3. Current Awareness Bulletins: An information service could produce a periodical bulletin for alerting the users about current information. It could include books, journal articles, reports, standards, patents, other documents produced locally but not easily available on the market etc. A bulletin could take the form of an index for just locating what is available. This requires less professional skills. Or it could take the form of an abstracting service. This has an advantage, especially if it is informative, in that it enables the user to decide whether or not to request for a particular article or not. Problems: it requires more professional input, and it is time consuming.

There are a lot of commercially produced abstracting services. Should an information service buy or produce its own abstracting bulletin or repackage the former? Producing its own, the service would be saving on foreign exchange and tailoring the contents to the actual needs. On the other hand, the commercially produced tend to be generalized.

The advantages of an SDI service are the following:

- It is time saving in that only a small and select file has to be searched;

- Once planned properly it is less expensive to implement than the on-demand searches. It tends to exclude backlog information that might overload the current file;

- The services include titles citations, index terms etc. The matching between the information received and the profiles can be done immediately without having to do a thorough scanning.

Whether to adopt a manual or mechanized SDI is dependent on a number of factors, for instance:

- the number of users being served
- access to or availability of a computerized system within organization
- the amount and complexity of literature being handled.

Some of the advantages of a manual SDI include closer and stronger ties with the user and better awareness of the literature. On the other hand where the number of users is bigger and information processing requires more sophisticated mechanism a computerized system would be most appropriate.

Currently there are a number of commercial SDI services. Some general, others discipline-oriented. While a commercial SDI service would release the staff from applying most of the intellectual resources into the system, it tends to be general and not tailored to the needs of a user or group of users in a particular organization. Besides, for us in developing countries, it involves parting with the hard-to-come-by foreign exchange. An in-house SDI would be preferable given that it would be tailored to the users actual needs. But it entails having more intellectual resources.

Feedback element is very important especially in areas like research where interests of users tend to change very rapidly. It enables the information services manager to correspondingly revise the profiles as the user's interests change or as he/she expresses satisfaction or dissatisfaction with the information/materials transmitted to him/her. It is really a means of knowing about the user's opinions regarding the effectiveness of the system's output such as each individual citation retrieved specifically and the SDI system in general.

Feedback could be accomplished through a discussion with the individual concerned. Another method is having the announcement sheet designed in such a way that a potion indicating user reaction is returned to the information service.

Conclusion:

In summation, literature is growing too rapidly. Man has had to devise systems that will enable him to get out of such mass information that is relevant to a particular need, demand or requirement. CAS/SDI is one of such devices. Though traditionally confined to enterprises mainly engaged in scientific and technical pursuits (e.g. think tanks, R & D, research departments in universities etc.) there is urgent need for information handlers in other areas to adopt system for the benefit of their users.

Profiles of individuals should be considered confidential and treated so.

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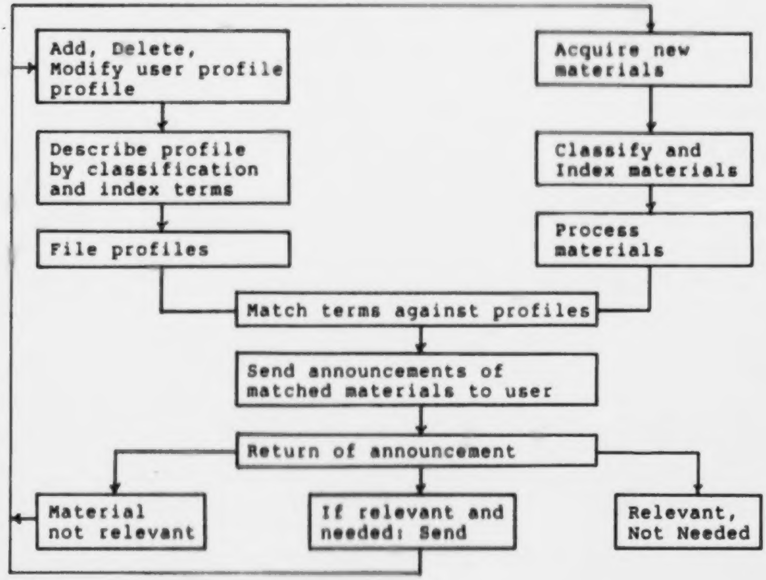
Add, Delete, Modify user profile profile
Describe profile by classification and index terms
File profiles
Acquire new materials
Classify and Index materials
Process materials
Match terms against profiles
Send announcements of matched materials to user
Return of announcement
Material not relevant
If relevant and needed: Send
Relevant, Not Needed

EASTERN AND SOUTHERN AFRICAN MANAGEMENT INSTITUTE

A. INFORMATION RESOURCES SHARING AND NETWORKING: AN OVERVIEW

1. Introduction

information is a vital resource in any organization. It is the raw material for decision making planning and control. It facilitates effective training/learning and research. It is the lifeblood of any development process. The developed world has developed faster because of the premium the put on information.

The developing world suffers from information poverty, in varying degrees, of course. The technologies in use are outmoded: the staff are inadequate both in quantity and quality. Yet within such a depressing situation one finds an up to date information service, which is properly managed; the staff are highly trained and motivated; the stockholders and patrons are very zealous about maintaining and sustaining the quality of their information service. Is there something that the majority of the poor information services can gain from poor information services can gain from the latter? Or, to put the question the other way round, what can the latter do to influence the improvement of the former? Can they act as agents of change?

In general, therefore developing countries should not leave their development process to chance. They will do better, if they realize that reliable, up to date and timely information is prerequisite effective and planning decision making.

2. Information Resource Sharing

Information resource sharing has been in existence as long as libraries and other types of information services. The existence of a book, leave alone a library is itself a form of information resource sharing. Many libraries came into existence because a group of individuals with a common desire and aspiration wanted to put a collection of books together for use by the group members.

The earlier version of the concept viz Library Co-operation was seen as "the extension of provision and improvement of facilities without a proportionate increase in the expenditure" (1). Library co-operation tended to emphasise objectives of library co-operation, materials and the process. On the other hand, resource sharing takes a broader view to include "a wide range of physical, intellectual and conceptual resources on the one hand and a body of people with library and information needs on the other" (2). Historically, the driving force behind the evolution of the resources sharing concept was the need to satisfy the felt needs of the user population.

3. Networking

A network, is "diverse autonomous information sources which are linked in a formal relationship, to provide increased access to materials and services from other libraries, achieve exploratory, developmental or operational status" (3). It provides an enabling and conducive environment in which the information professionals (librarians, documentalists, archivists) can exchange ideas and share resources. The network, therefore, provides the organisational structure which facilitates information resources sharing.

4. Benefits of Information Resources Sharing and Networking

Resources sharing and networking are, therefore, seen firstly as a strategy to "improve the ability of the participating libraries to perform searches" (4). Other benefits include:

- staff specialisation which would enable staff to concentrate on a limited number of tasks, and, therefore, lead to improved performance, and job satisfaction initially;

- better working relationship between co-operating institutions as a result of continued interaction and exposure through staff exchange, visits etc.;

: provision of services evenly throughout the country;

: facilitation of information technology transfer from one institution with an array of information technologies such as computers, microfiche, CD-ROM etc., to one which is only beginning to build up an information technologies awareness environment,

: development of a national information policy,

: assessibility to some essential but difficult to get hands on items due to funds limitation e.g. in a trade information environment, not every trade information service can afford the *Reference Book for World Traders;* availability of a copy in a resource sharing network will enable those who do not have it to respond to some trade enquiries; and

: reduction of wastage and duplication.

5. Fears hindering Information Resource Sharing and Networking

Inspite of the benefits accrued to resources sharing schemes there are fears, both real and perceived, which, unless properly dealt with, could minimise the chances of even the best conceived scheme taking off. These fears may be categorised as psychological, political and legal, funding, communication and planning, and include:

: *the innate desire for local self-sufficiency* to satisfy the needs of the patrons when they arise; this, however, is an unattainable supposition especially in developing countries where individual libraries depend on hard-to- come-by forex to buy books from overseas;

: the patron size, needs, concern and pressure where the patrons went to be assured that their library will be able to answer to their needs at the right time(sometimes the requests are made to-day but the answers were required last week);

: size and status where the stockholders are concerned that growth and development of their library is in line with the rest of the sectors in the locality; should they in any way feel that the resource sharing scheme is likely to hinder or retard the rate of growth and development, they will resist; besides, there is the issue of whether the different partners are operating as equals irrespective of size or type of library;

: the past: this is to do with the fear that should the scheme fail like X or Y scheme did, then the individual co-operating libraries are bound to lose out. (I guess the story of the former East African Community must be lingering in the minds of decision makers who would like to come up with similar economic/political co-operative ventures).

: psychological barriers where staff are concerned that their status, efficiency, job security, salaries, autonomy or independence etc. are likely to be effected by belonging to a larger entity; it could very easily bring in inertia in the organisation, if the fears are not dispelled immediately;

: something-for-nothing concept where a library enters a resources sharing scheme with certain expectations in mind, and when these are not fulfilled dissatisfaction sets in leading to departure from the scheme; for instance, a relatively large library may feel that rather than gaining something out of co-operating with other smaller size libraries it is being taken advantage of;

: **administrative:** what does the board of directors or stakeholders think about the whole proposal of sharing their resources with other, especially given the struggle some of the authorities take to get foreign exchange to acquire some of the library materials?

What about trans-border resource sharing schemes? Does the customs authority across the border regard a book sent in on resource sharing basis as any other taxable item? How easy is it to send it back?

: **geographical barriers:** Kenyatta University, Kenya, and the Institute of Teacher Education Kyambogo, Uganda, have a lot in common. Given the physical and geographical distance between them it becomes difficult for them to have access to each other's library resources. They could resort to telephone, of course, expenses allowing. However, expenses aside, even to-day when telecommunication infrastructures are improving it is not uncommon to book a call to a town across the border and it won't come until six hours later, that is if it comes.

6. Areas of Co-operation

: referral services,
: inter-library lending,
: access to translations,
: co-operative acquisitions,
: co-operative storage,
: staff education and training,
: user education,
: technical processes,
: Information Technology applications,
: joint research and development,
: staff expertise, and
: national bibliographic service.

7. The Need for Information Resources Sharing in East Africa

Libraries and other types of information services in East Africa are increasingly being called upon to provide more relevant, up-to-date and timely information to a wide range of users. To satisfy the varied needs they require availability and accessibility to a variety of information.

Unfortunately, there is a dearth of information in the librariesand similar information services. This is caused partly by limitation on foreign exchange which they require to obtain information sources from overseas market. With several other national agencies competing for a slice of the foreign exchange available nationally very few of the libraries get the portion they require. Consequently, only a few of those can afford to have a wide range of information sources. However, in the circumstances, it would not be cost - effective to duplicate most of the information/information resources.

The solution to the above information dilemma lies in information resources sharing and networking, notwithstanding the problems mentioned in A (4) above, some of which are based on misconception. What is important is to continue to educate the authorities responsible for the management of the various types of information services that information resources sharing is beneficial to scholarship, and therefore, to national development.

8. The Need for a National Network

Is there a need for a national network established through intervention by state? Some of the countries in the developed world are still grappling with this question. Many of these countries have information resource sharing and networking schemes which, by virtue of their size and services could claim to be national. For instance, the Ohio College Library Centre (OCLC), certainly one of the most developed networks in the USA, is not a child of state intervention.

In the context of the developing countries state intervention would be called for to enable "co-ordination of a nation's total library and information resources and ensure adequate funding (5). This is particularly important given that on the whole libraries do not have large enough capital base of their own to invest in things like computer hardware and software, telecommunications etc. However, state control must not be allowed to exceed co-ordination as this may to some extent have an effect on the zeal, initiative and the goodwill of the participating libraries, institutions and the individual professionals.

B.THE EAST AFRICAN EXPERIENCE

1. INTRODUCTION

i. Besides the informal networks that existed and still exist among East African Librarians there were some formal networks. For instance, the East African Literature Service, based at Muguga in Kenya, was a mine for researchers in agriculture, agroforestry and related discipliness. There was the East African Literature Bureau with offices in each of the former East African.

Community (EAC) member state. There was the East African Library Association which has now expanded to include the rest of the countries in Central and Southern Africa. The demise of the EAC meant the end of the East African Literature Service, a sad blow for the researcher and the librarian, among others.

ii. For over a decade the Eastern and Southern African Management Institute (ESAMI) and the German Foundation for International Development (DSE) have worked together tirelessly through Continuing Education (CE) Programmes to raise the standard of information systems and services, and personnel in the Eastern and Southern African sub-region. Many of the programmes were of a general nature such as the annual Management of Information Services Programme. Others focused on specific areas such as Managing Industrial and Rural Development Information Services; Agricultural Information Services etc. All along these programmes were of a regional nature. About six years ago following a recommendation of the Information Experts Meeting held in Harare it was decided that the programme on Establishment of a National Information and Documentation Network should be country-based. The original regional nature of the earlier programmes was not entirely abandoned. Renowned professionals from neighbouring countries were invited to present papers. The Seminars were of a policy nature attended mainly by senior information services personnel. They discussed policy issues involved in setting up a national information system and network; centralised/shared technical services such as as document processing; role of national archives in a national information network; role of standards, co-operative human resources development, co-ordination of various types of libraries such as university libraries and services etc. Questions such as the following arose ut of these seminars: What next? Were the seminars going to be another talking shop?

The questions were asked with concern. Earlier on in at least two of its meetings the Standing Conference of Eastern, Central and Southern African Librarians (SCESCAL) had exhaustively discussed the issue of Information Resources Sharing and Networking. But nothing seemed to be materialising in the respective countries.

Unfortunately, similar policy-focused seminars could not be held for Ethiopia, Sudan and Djibouti.

2. TANZANIA

01 Objectives

The Organizing Committee of the Seminar had these objectives in mind:

.02 RESOLUTIONS

WHEREAS there has been a significant development of library, archives, documentation and other information units in Tanzania and **WHEREAS** the willingness to cooperate is apparent among the various institutions, **NEVERTHELESS** the problems of a developing country of poor resources such as insufficient library materials, shortage of trained and skilled manpower, inadequate training opportunities, insufficient standards, poor telecommunication facilities and absence of an overall national information policy plan make it imperative to have an innovative approach to the rationalization of the resources that do exist, and BEARING all this in mind, the Seminar RESOLVES:

.025 The Organising Committee of the Seminarshould be reconstituted as a Planning Committee for preparing proposals for the establishment of a national information and documentation network;

: to publicise the proceedings and resolutions of the Seminar;

: to maintain the momentum of this initiative;

: to inform government about its intentions;

: to seek technical assistance for a consultant to advise;

: to draw up a plan for a national information and documentation network to submit to the government.

.028 WHEREAS the Planning Committee is charged with the task of preparing the plan, the Seminar FURTHER RESOLVES that the National Information and Documentation Network should incorporate the following elements:

: It should have an Advisory Council representative of all institutional and user groups;

: It should have a small secretariat with clearly defined powers;

: It should be located in a key ministry responsive to all sectors;

: It should have the powers to seek supplementary resources for promoting library and information development.

: German Foundation for International Development (DSE)

: International Federation of Library Associations and Institutions (IFLA)

: International Development Research Centre (IDRC)

: Pan African Documentation and Information System (PADIS)

: Local sponsoring institutions namely National Archives of Tanzania, Sokoine University of Agriculture, Tanzania Library Association, Tanzania Library Services and University of Dar es Salaam Library.

C. SUMMARY OF PROPOSALS FROM THE SEMINARS AND ESTABLISHMENT OF NATIONAL INFORMATION AND DOCUMENTATION NETWORKS FOR KENYA, TANZANIA AND UGANDA

1. KENYA

.01 Policy Issues and Framework of National Information Systems

.011 The seminar noted with appreciation that information and informatics features in the 1988 - 1993 National Development Plan. In particular, it was noted that "during the plan period a feasibility study intended to form the basis for the development of a broad policy framework regarding the co-ordination and development of information infrastructure will be undertaken eventually leading to a clearly articulated national information and informatics policy."
In view of this seminar commends the Government for its recognition and urges the Ministry of Planning and National Development to facilitate the proposed feasibility study. The seminar further recommends that the same Ministry re-activates the Inter-Ministerial Committee on National Information and Informatics Policy in Kenya.

.012 **The seminar participants noted the need for co-ordination of information systems and services in Kenya. In view of this the seminar recommends that an Ad-hoc Committee under the Director of KNLS and the Director of Kenya National Archives and Documentation Services be established to oversee the implementation of co-ordination of information systems and services. Membership of the committee will consist of representatives of University libraries, National Council for Science and Technology. The Committee's broad term of reference is "to co-ordinate all aspects of information systems and services in Kenya".**

.013 This seminar noted that there are some shortcomings in the implementation of the Books and Newspapers Acts, especially in terms of deposits. In view of this the seminar recommends that the institutions charged with this responsibility, should approach the Attorney General Chambers with a view to working out modalities that will ensure proper collection and distribution of publication as required by the Act. There is also need for the receiving institutions in monitor whether what has been published and printed has actually been deposited. The seminar recommends that the University of Nairobi and the Kenya National Archives and Documentation Services should assist in making known what they have received as legal deposits to facilitate the publication of an up-to-date National Bibliography.

.014 The seminar noted that recommendations to relaunch the Kenya National Book Development Council were passed on to the Minister for Education in 1988. In view of the importance played by book production in national development, the seminar urges the Ministry for Education to hasten the establishment of the proposed Kenya National Book Development council.

.015 The seminar participants noted that there was need to encourage and support the use of information technology (IT) in co-ordination of information systems and services. In view of this, the seminar recommends that there is need to relax importation regulations and also provide enough foreign currency on Information Technology products especially those required for use in government, parastatals, libraries, archives, documentation centres and educational services.

Efforts must also be made to reduce duty on such equipment. It is further recommended that such equipment should be compatible.

.016 The seminar noted that despite the fact that a lot of research was being undertaken in Kenya, there was no comprehensive published list of research in progress. In view of the role research findings play in development, this seminar recommends that in line with the functions spelt out in sessional paper No. 5 of 1982, the National Council for Science and Technology should up-date the publication "subject guides on information sources and services" and also undertake the production of an up-to-date research directory.

.017 The seminar noted that for an effective co-ordination, there was need to develop national standards of operations, stock development, buildings, manpower, bibliographies and citations. In view of this, the seminar recommends that the Kenya Bureau of Standards (KBS) re-activate the committee on bibliographic standards that used to exist in this regard.

.018 The seminar further noted that in order to improve the management of information in the Public Service and to link this with other national information systems and services, there was need to develop standards in records management procedures and systems, and to intensify training in records management at all levels.

.019 The seminar participants noted that an effective professional association could play a great role in promoting information systems and services in the country. The seminar, therefore, recommends that there is need to re-examine the existing information professional association - the Kenya Library Association professionals. This calls for the formation of a new and more effective professional association with a new name.

.0120 The seminar noted with appreciation the government's commitment in supporting information systems and services in the country. The seminar participants, therefore, recommend that those charged with the responsibility of managing the information systems and services should reciprocate through total commitment and dedication of these national efforts.

.0121 The seminar noted that despite the recognition by the government of the importance of information in national development, it is observed that the available information is not being used to the maximum and therefore this seminar recommends that the information institutions/professionals should find ways and means of developing greater awareness among the public in general. There is, therefore, a need for diversify and strengthen user education at all levels.

.0122 The seminar participants noted with appreciation the government's commitment in the current National Development Plan to expand and co-ordinate library, archives and documentation and information services in the country. In order to achieve this objective the seminar recommends that the government considers providing additional funds for the above purposes.

.0123 The seminar participants noted with satisfaction the efforts being made by Padis in Africa in developing and strengthening the information and documentation infrastructure. It was noted with satisfaction the steps that PADIS has taken to have Kenya designate a national co-ordinating centre for PADIS. In view of these efforts, this seminar recommends that a national co-ordinating centre for PADIS be officially designated by the Ministry of Planning and National Development without delay. It further recommends that this centre should be located in the Ministry of Planning and National Development itself.

.0124 The seminar noted that resource sharing is currently taking place in Kenya but at a low level and on an adhoc basis. In view of the above, the seminar recommends that for effective sharing of resources, an enabling environment should be created and sustained by the Ad-hoc Committee to be established according to recommendations 2 above. An enabling environment should consist of the following:

: Acceptable administrative arrangements;

: Adherence to professional ethics and commitment;

: Encouragement of the use of appropriate modern information technology;

: Harmonization and standardization of hardware and software in order to avoid problems of incompatibility;

: Co-operation and contribution towards production of union catalogues;

: Availability of human resources for exchange, attachment, secondment etc.;

: Establishment of a data base of experts (who is who) in the information field.

.0125 The seminar recommends that all the resources for sharing would be determined by the Ad-hoc Committee to be established under recommendation 2. Such resources should include monographs, serials, non-book media, archives, human resources, and guides to such resources.

.0126 For the success of the process of resource sharing, it is recommended that:

: inter-library lending should be encouraged;

: borrowing/requesting organizations should meet the costs incurred;

: co-operative acquisition of resources, cataloguing and classification, and preparation of indexes and abstracts on sectoral basis should be encouraged;

: and the use of common communication formats in definitions of data bases should be encouraged.

.0127 In the spirit of advancing co-ordination and cooperation in the fields of manpower, education and training for the information professions we recommend that there should be the following levels of formal training in Kenya:

Certificate: 1 year
Diploma (undergraduate): to be decided
Undergraduate degree: 4 years
Postgraduate masters: 2 years
Doctoral programmes: to be decided.

.0128 In the light of the above recommended training structure we urge the Directors of Kenya National Library Services and Kenya National Archives, Charmen Kenya University Librarians Committee, Convention of Colleges and Polytechnics Librarians and the Professional Association to approach the Principal Kenya Polytechnic to discuss the duration of the existing diploma courses. They should urge him to continue offering the certificate courses in library and archives studies. The committee should also discuss relocation of the certificate courses with other concerned authorities if the Kenya Polytechnic is unable to remount the courses. This committee should also collect information on curriculum, teaching and examination on existing certificate courses for evaluative purposes.

.0129 To improve co-ordination of training in Kenya we recommend that a committee comprising those involved in the training of information professionals be formed and that the Faculty of Information Science of Moi University be asked to convene the first meeting.

.0130 That the teaching of information technology on all courses, both formal and informal, be encouraged.

.0131 That special attention be given to the co-ordination of continuing education and this should be considered as one of the responsibilities of the restructured professional association (see recommendation 9).

.0132 That each training institution explore ways of setting up advisory committees made up of practising professionals to advise on their respective programmes.

.0133 That the National Ad-hoc Committee on co-ordination and resource sharing explore the possibility of carrying out a manpower survey in the field of information in Kenya.

.0134 That recognising the need for appropriate training materials, the committee of recommendation 19 above explore ways and means of producing such materials.

.0135 That the same committee of recommendation 19 above explore ways and means of furthering regional co-operation and resource sharing of training within Eastern and southern Africa through all relevant institutions active in this field.

.0136 Finally, the Seminar recommends that the Ad-hoc Committee to be established according to recommendation 2 above convene a meeting to reveal successes and failures in the implementation of all the above recommendations in a year's time from now.

2. TANZANIA

.01 OBJECTIVES

The Organizing Committee of the Seminar had these objectives in mind:

.011 To examine the situation of library, archives, documentation and other information services in Tanzania.

.012 To consider the problems of library, archives, documentation and other information services and the information needs of the users, researchers and planners.

.013 To plan further for the future development of a network of library, archives, documentation and other information services taking into account developments in the regional and taking advise from national and international institutions in these fields.

.02 RESOLUTIONS

WHEREAS there has been a significant development of library, archives, documentation and other information units in Tanzania and **WHEREAS** the willingness to cooperate is apparent among the various institutions. **NEVERTHELESS** the problems of a developing country of poor resources such as insufficient library materials, shortage of trained and skilled manpower, inadequate training opportunities, insufficient standards, poor telecommunication facilities and absence of an overall national information policy plan make it imperative to have an innovative approach to the rationalization of the resources that do exist, and **BEARING** all this in mind, the Seminar **RESOLVES:**

.021 That the government needs to revitalize its recognition of the importance of information as a key resource for effective national development;

.022 That library, archives, documentation centres and other information units need to be rehabilitated, developed and strengthened in all sectors, and be established where they do not exist;

.023 That in order to maximise the provision and use information services, the establishment of a network for the coordination of information systems and services is a priority;

.024 The Seminar FURTHER RESOLVES that the recommendations of the discussion groups should be implemented in the following ways:

.025 The Organising committee of the Seminar should be reconstituted as a Planning Committee for preparing proposals for the establishment of a national information and documentation network;

.026 The Planning committee should have powers to co-opt other members as they see fit, and should be as widely representative of interested parties as possible.

.027 The Planning Committee should have its first meeting by mid-April 1989, and should have the following functions:

: to publicise the proceedings and resolutions of the Seminar;

: to maintain the momentum of this initiative;

: to inform government about its intentions;

: to seek technical assistance for a consultant to advise;

: to draw up a plan for a national information and documentation network to submit to the government.

.028 WHEREAS the Planning Committee is charged with the task of preparing the plan, the Seminar FURTHER RESOLVES that the National Information and documentation Network should incorporate the following elements:

: it should have an Advisory Council representative of all institutional and user groups;

: it should have a small secretariat with clearly defined powers;

: it should be located in a key ministry responsive to all sectors;

: it should have the powers in seek supplementary resources for promoting library and information development.

be sent to the seminar participants by September 30th and complete the plan, if possible, by December, 1989 with a view to organizing a national consultative early in 1990.

should be circulated as widely as possible especially to users, professionals and planners.

the following:

: German Foundation for International Development (DSE).
: International Federation of Library Associations and Institutions (IFLA).
: International Development Research Centre (IDRC).
: Pan African documentation and Information system (PADIS).

: Local sponsoring institutions namely National Archives of Tanzania, Sokoine University of Agriculture, Tanzania Library Association, Tanzania Library Services and University of Dar es Salaam Library.

of neighbouring countries namely Kenya, Somalia, Uganda and Zimbabwe, and representatives of the following institutions namely Ministry of Education, Ministry of Finance, Economic Affairs and Planning, Bank of Tanzania, Tanzania commission for Science and Technology, Ministry of Labour and Manpower Development.

Organizing committee for planning and organizing this successful Seminar. Finally the Seminar would like to thank all those who worked behind the scenes on day to day activities.

3. UGANDA

.01 Preamble

As far back as 1974, Uganda felt the need to co-ordinate its information services to remove the duplication of efforts and resources and to make these services more effective. The Advisory Committee on Documentation and Information Network was set up to advise the Government to achieve this end.

In 1988 the Government established the National Information Agency Advisory Committee (NIAAC) to advise on the formulation of National Information Policy and an institutional frame-work for the establishment of a National Information System and Services. As a result of the work of this Committee, the Government requested UNESCO to send a consultancy mission to advise the Government on the above activities. The UNESCO Consultancy Mission was sent to Uganda in September, 1988 and a Seminar on the establishment of a National Information system and Services was held in Kampala between the 11th and 15th September, 1989. The Seminar formulated a National Information Policy for Uganda and recommended the establishment of a National Information system and Services.

In order to concretise the National Information system and Services efforts, Eastern African School of Librarianship with the sponsorship of the German Foundation for International Development (DSE) organised a Seminar on the Development of a National Information and documentation Network for Uganda from the 1st - 9th March, 1990. This Seminar was attended by external participants from the Federal Republic of Germany, Sudan, Kenya and the United Nation Economic Commission for Africa (UNECA). The Ugandan as information experts representing Government ministries and parastatals, university institutions, public libraries, banking and research institutions and observers from related institutions.

The seminar participants expressed their appreciation to the German Foundation for International Development (DSE) for sponsoring the Seminar and they conveyed sincere thanks to DSE through their representative. The Seminar participants expressed appreciation to the Government of Uganda for the continued support given to the library and information science profession, and expressed special thanks to the Rt. Hon. Prime Minister for formally opening the Seminar, and to the representative of the Hon. Minister for Local Government for formally closing this Seminar.

.02 Recommendations

.021 The Seminar recommends to the Government of Uganda that whenever an external consultant in the library and Information professions is engaged there should be a local counterpart attached.

.022 The Seminar calls upon the Government to ratify the Universal copyright Convention of 1952 as revised in 1972 in Paris.

.023 The seminar urges the Ministry of Planning and Economic Development to accelerate the establishment and functioning of the designated national focal point for Pan-African Development Information system (PADIS) under the United National Economic commission for Africa.

.024 The Seminar notes with appreciation the efforts so far made by the Uganda Government in collaboration with Food and Agricultural Organisation (FAO) to establish an Agricultural Information System based at Kawanda Agricultural Research Station and urges the Government to extend this information system to all parts of the country so that the information from the system is made available to farmers.

.025 The Seminar stresses the importance of National Archives in the preservation and management of public records for official reference and research, and urges the government to:

- : enact the necessary legislations to govern the acquisition, disposal, preservation and use of public records, and
- : urgently provide suitable and adequate physical facilities.

.026 The Seminar recommends that the inter-University Council for East Africa establishes a subject committee for Library and Information Sciences for the exchange of information and cooperation in training programmes for library and information professionals.

.027 Recognising the importance of oral literature and cultural heritage and folklore in national development, the Seminar urges the Government to establish a mechanism for the recording, preservation and dissemination of this valuable information.

.028 Recognising the role of information in rural development the seminar urges the Government of Uganda to establish information centres in the rural areas so as to publicise the Government's development policies, and also to satisfy the information needs in agriculture, health, small-scale industries etc.

.029 The seminar urges the Ministry of Health to establish a National Health Information system for Uganda on the lines recommended by WHO and similar to the Agricultural Information Service recently established at Kawanda.

.0210 The Seminar strongly urges the Makerere University Senate and council to provide avenues for the diploma holders of the EASL to enter the Bachelor of Library and Information Science programme.

.0211 The seminar urges the Ministry of Education to strengthen the teaching of library and information skills in Teacher Training Colleges and Schools and to establish school libraries where they do not exist.

.0212 The Seminar urges the Ministry of Public Service and Cabinet Affairs (currently housing the Interim Secretariat for NATIS) to commission the compilation of a complete library and information services inventory as a pre-requisite to the establishment of the National Information system and Services.

.0213 The Seminar recommends that the Ministry of Information and Broadcasting be actively involved in the establishment and functioning of National Information System and Services.

D. SUMMARY OF PROPOSALS FROM COURSES ON MANAGEMENT OF INFORMATION RESOURCES SHARING AND NETWORKING FOR KENYA, TANZANIA, UGANDA, ETHIOPIA, SUDAN AND DJIBOUTI

1. PREAMBLE

In senior information professionals and users of information in each of the countries except for Ethiopia, Sudan and Djibouti, a series of Courses on managing information resources sharing and networking were held as follows:

: Kenya, Mombasa 15 - 26 April 1991
: Tanzania and Uganda, ESAMI Headquarters,
  Arusha 22 October - 02 November, 1990
: Ethiopia, Sudan and Djibouti
  ESAMI Hqtrs. Arusha, 23 March - 03 April, 1992.

Participants to these programmes were mainly mid-level managers of libraries/documentation centres, lecturers at schools/faculties of library and information sciences, and archivists. The selection of participants was made in such a way that each specialisation (academic, public and special libraries, documentation centres and archives) was adequately represented.

The group were each divided into specialization, and asked to design an Action Plan for participating in a national information resources sharing and networking, and also recommend a national governance structure, if they felt it was necessary.

The rationale for these groupings is that they would be both participants and beneficiaries in the national network. For instance, for the public librarian to be able to satisfy the educational, leisure and cultural information requirements of his/her reader he/she would need access to all national information resources. Academic libraries would appear to be one of the major beneficiaries in any networking scheme. The school libraries on the other hand would have access to a wider range of materials to "enable the good teachers to reach beyond the written curriculum into areas of inquiry to build learning experiences on the students' natural curiosity and individual interest" (6).

Although they appear to have the least need for participating in national information resources sharing and networking special libraries and documentation centres would bring to the scheme highly specialised materials and expertise, pro-activeness, aggressiveness and dynamism which have tended to differentiate them from the other types of libraries. Finally, archives are the memory of a nation. Their participation in the scheme brings in a rich resource which is not easily available in any of the other types of information services.

Most groups saw the need to concentrate mainly in the following areas at the initial stage:

- co-operative acquisition;
- co-operative processing;
- inter-library lending;
- staff exchange;
- sharing selection tools such as MARC tapes, BNR etc., and
- shared storage.

Resources sharing was seen as a strategy for:
- introducing standardisation in the tools and services;
- improvement in the terms and conditions of services;
- improving upon individual library stock;
- avoiding unnecessary duplication in information processing;
- bringing about change in attitude towards information services, and efficiency and effectiveness, and
- increasing human resources development and training opportunities.

2. RECOMMENDATIONS

1. KENYA

.01 Academic Libraries

.011 Acquisitions

The University of Nairobi Library should be made the legal depository library for the system.

There should be an agreement for exchange of publications emanating from institutions, and a copy of each should be deposited with the University of Nairobi Library.

.012 Processing

Individual libraries should be responsible for cataloguing and classification of their resources. However, they should make copies of the cards to be distributed to other libraries within the network.

The consultation board should work out guidelines for standardization of processing materials. By 1993 the Project Committee should ensure that Inter-Library lending standardization in processing materials has been achieved.

.013 This should be formalized by legal backing. There should be standardized borrowing and lending forms. Issues like security of documents, cost of postage and mode of transportation should be looked into by the Committee.

.014 Human Resources

There should be staff exchange programmes and training for professional upgrading through attachment in different libraries, seminars and workshops.

Institutions involved in the training of library personnel e.g. K.U., Moi University and Kenya Polytechnic should coordinate the training programme.

.015 Storage

Strategies should be developed for sharing storage space by the year 2000.

.016 Preservation and Conservation

Libraries in the same geographical area within the network could cooperate in binding, microfiling and fumigation. Otherwise, every individual library should aim at preserving its resources.

.017 Formation of Resource Sharing Network

The mesh network should be adopted to facilitate communication within the network.

The network should communicate with other academic libraries in neighbouring countries within the region and abroad to be able to share MARC and to have an online access to the resources.

The sub-committees of the various sub-networks should select representatives to form a national committee which will then be charged with the responsibility of formulating a national information policy aimed at having a network covering the information resources of the entire country.

.018 The Kenya Library Association

It should be revamped to enable it to play a more active role in the national information system.

.019 The Convention of Polytechnic and College Librarians

This should be immediately revised.

The Convention together with the Public University Librarians' Committee establish a project committee to implement networking in academic libraries.

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.0120 Kenya National Bibliography

The Kenya National Library Services should produce as soon as possible an up-to-date Kenya National Bibliography.

.0121 Implementation

The Proposed network should be operationalized by 1994. By 1995 some of the operations should be automated.

By 2000 the networking system should be fully automated depending on the improvements in the telecommunications systems in the country.

.0122 Developments in IT.

The Academic Libraries should seriously follow developments in Information Technology with a view to using the developments in the field to enhance the performance of the network. Indeed by the year 2000 it is expected that academic libraries should have computerized their services and be ontime with overseas services.

.0123 Communication

Once established the Project Committee should embark on an aggressive publicity campaign and produce a monthly newsletter to inform and up-date members on progress made.

.02 Special Library System

In view of the important role information plays in national development and in order that resource sharing may be effective, it is recommended that:

.021 The information workers should endeavour to market the resource centre to the top management of their parent organisation in a bid to lure recognition and better budgetary allocation.

.022 A National Special Libraries Advisory Council should be established. This should create a forum for information workers in special libraries and information centres for the exchange of ideas and experiences.

.023 Special libraries/information centres should be manned by well qualified personnel to undertake specialized tasks such as indexing, abstracting, etc.

.024 Special libraries/information centres should have common standards in their operations, e.g. cataloguing codes, classifications schemes, indexing language and physical facilities.

.025 Information technology should be introduced in special libraries and information centres for efficient and effective operations.

.026 Terms and conditions of service of staff should be improved to motivate the staff.

.027 Kenya Library Association should be fully involved in the proposed resource sharing and networking.

.028 Kenya Polytechnic, Moi University and Kenyatta University, which have established training facilities for information and library workers should be more involved in setting standards for libraries and information centres.

.029 A national secretariat should be formed to coordinate all the information systems and services in the country.

.0210 Networking can be effected through both star and distributed systems. Networking should start from individual libraries followed by sectoral and later National Information System, however, cannot be effected overnight. A time limit of at least ten (10) years is needed to put the system into full operation. We, therefore, propose the following four phases:

Phase One: Individual libraries should organise their libraries/information centres in an acceptable manner (see appendix 2).

Phase Two: Special libraries and information centres with common subject areas interlink and have a common focal point. (see appendix 3).

Phase Three: Subject area focal point will be interlinked into a central focal point:- S.L.I.S. This S.L.I.S. should have co-ordinating committee. (see appendix 4).

The Final Phase: Will be the formation of a national information system (N.T.S) which will incorporate all the other information systems in the country. (see appendix 5).

ACTION PLAN

	Period	Duration
Individual/Libraries	1991-1992	1 1/2 years
Sectoral (subject)	1993-1995	3 years
Special Libraries/ Information System	1996-1997	2 years
National Information System (N/S)	1998-2000	2 years

.03 Public Library System

.031 **KNLS Board of Directors to appoint a coordination committee composed of professional librarians from information centres.**

.032 Coordinating team appointed by KNLS Board should be set-up by June 1991.

.033 Appointed team should immediately organise seminars and workshops to educate staff on intended changes and expected advantages beginning August, 1991.

.034 The team should formulate rules and regulations and standards to be used in technical operations to be adapted by libraries and documentation centres by March, 1992.

.035 All member libraries should forward comprehensive accession registers for distribution to other members by august, 1992.

.036 KLA should be strengthened and lobby at national and international level for network support and recognition by 1993.

.037 Appointed team should have completed any other aspect toward the resource sharing network by January 1992.

.038 KNLS should start actions toward legal deposit law and if necessary take culprits to court so that a complete current and comprehensive KNB is ready for use by members as a selection tool by January 1992.

.039 Public library network should be operational by June 1993.

.0310 By June 1994, resource sharing network should be evaluated to determine constraints effecting its optimal operation by June 1995.

.0311 By the year 1996/1997 other information centres (academic, special, archives, etc,) will be invited to join the network in preparation for national information network by 2000.

.0312 By the year 2000, resource sharing with neighbouring countries and abroad will take place through ITS application.

.0313 Mesh Network should be adopted.

.04 Archives/Records Management

.041 The thirty (30) year rule which limits accessibility to archival materials by users in an information agency should be reviewed in order to facilitate maximum exploitation of the resource.

.042 The procedure adopted by the government for use of the archival materials through the permit system has been noted as a major obstacle to our information seekers. It should be reviewed so as to attract more researchers and other users.

.043 Confidentiality of classified materials has also been noted to be a hindrance to potential users of the archival materials. We recommend a more flexible and constant review from time to time.

.044 The present age limit of eighteen (18) years eligibility criterion has reduced the volume of users because a large proportion of our potential users are below 19 years of age e.g. the 8-4-4 graduates. We recommend that in order to include this large group users a lower age limit should be considered as a matter of urgency, preferably fifteen (15) years.

.045 We note that many of our potential users perceive archives as an elitist and a preserve of the "Asoni", a situation that is not conducive to the development of information consumption. To eliminate this myth, the Kenya National Archives in collaboration with other national information agencies should educate these users.

.046 Archives has been perceived as a dumping ground for anything considered to be of little use to the immediate functions of a public office. To remove this misconception we recommend that a more aggressive awareness education should be conducted for public officers and other decision makers and planners.

.047 Currently the storage procedure is that the archival materials for research are centrally kept at the Kenya National Archives Headquarters. We recommend that a more decentralised system be employed to provide required information at local level.

.048 There has been not quantitative information on the users referred to the Kenya National Archives from other information agencies. We recommend that a regular recording should be introduced to show the extent of use and as feedback information for the Archives Department.

.049 We recommend that the information available at the Archives be part of reference collection in all the information agencies in order to facilitate a national network for information as illustrated in the diagram attached.

.0410 There is need to have collaboration on conservation, preservation and disaster planning with all information resources agencies in the country and in the neighbouring countries.

.0411 We recommend that a council be established by the government to coordinate the activities of all the information agencies cited in our recommendations. The membership of this council should be drawn from the existing information agencies in the proposed network.

.0412 We recommend that cooperation of all information agencies in the republic be implemented as soon as possible, preferably not later than 1995.

.0413 The Ad-hoc Committee should workout the modalities so that these recommendations be implemented within the given time frame.

3. TANZANIA

.01 Preamble

Aware that the Planning Committee for the establishment of a National Information and Documentation Network in Tanzania has made some progress since February 1989, also AWARE that significant development in the information handling and disseminating sector have since taken place viz: establishment of the school of Library Archives and Documentation Studies (SLADS) and the EMERGENCY of networks involving the Universities and Management Development Institutions (MDIs), also TAKING into account efforts by some organisations to develop contacts with information systems like AGRIS, PADIS and others developing bibliographic tools like Union lists of serials and Director of libraries etc.

.02 Resolutions

Bearing all this in mind, course participants RESOLVE:

Considering the appropriateness of the subject/sectoral/activity approach to networking and taking into account the eminent formation of the Tanzania Advisory Council for Resource Sharing and Networking, participants recommend:

.021 A combined star and distributed networking model;

.022 Network sub-systems be formed around the following subject groupings/sectors;

Agriculture, Medicine, Science and Technology, Trade and Industry, Education, Economics and Planning, Management, Women studies, Human Resources, Environmental Resources, Communication and Transport Training in Libraries, Archives and Documentation.

.023 Incorporation of the following activities: Preservation documents, Co-operative and centralised acquisition and processing, Union Catalogues, Interloan, Exchange, Document Reproduction, Bibliographic control and Data bases.

.024 Urge the Planning Committee to speed up it by:

: Constituting the Advisory Council and the Secretariat;

: Preparation of standards, guidelines, manuals and policies.

.025 Commend the existing efforts by individuals institutions like Tanzania Library Services, (TLS) and the Universities in compiling bibliographic tools, and urge:

: Universities, TLS and other Institutions to produce some of these tools jointly.

: other information units to embark on the compilation of accessions lists, union lists, exchange and subject lists to improve in readiness for the coming networking system.

.026 Recognising the importance of the new technologies in information handling (IT) for speedy information flow within the network and accessibility of using the new technologies, e.g. computers and other communication gargets, the various libraries and information services should endeavour to adopt and popularise the use of such technologies for information handling.

.027 Notes with concern the absence of the co-ordinator of libraries as stipulated in government regulations hinderto speed up library development and enhance co-ordination, recommend:

: The establishment of a Library Section at the Ministry of Education;

: Appointment of the Library Co-ordinator and any other officers.

.028 Realising the importance of trained manpower in information work and networking, participants:

Congratulate the Government of Tanzania for establishing the School of Library Archives and Documentation Studies (SLADS), and

: Urge continued support by the Government, other national and international organisations.

: Recommend that SLADS and other schools of librarianship in the region include in their curricula courses on information resource sharing and networking.

.029 Propose that library schools in the region conduct manpower survey in their respective countries and find ways and means to share tutorial expertise and publications through exchange programmes and run joint trainers courses.

.0210 Urge the University of Dar es Salaam to speed up efforts to establish a Library School.

.0211 The participants, in appreciating the inclusion of the Tanzania Library Association (TLA) in the Planning Committee, further recommended that TLA should made a follow-up of resolutions made at seminars, workshops, conferences etc.

Should ensure that documents produced (proceedings, resolutions etc.) reach the appropriate organisations to which they are addressed.

Play an effective role in publicising information resources sharing and networking activities in the country.

.0212 TIME FRAME

ACTIVITY	TIME	RESPONSIBILITY OFFICE
1.Formation of Advisory Council	December, 1990	Planning Committee
2.Appointment of Secretariat	April 1991	Advisory Committee
3.Compilation of Networking	June, 1991	Advisory Committee
4.Joint Production of Tools	June, 1991	Tanzania Library Services, University Libraries, Management Institutions Libraries
5.Preparation of Curriculum on Resources Sharing and Networking	July 1991	SLADS

6. Appointment of Co-ordinator at the Ministry of Education	July 1991	Ministry of Education
7. Formulation of Standards, Regulations, Guidelines, Policies and Manuals	August, 1991	Advisory Council

4. UGANDA

.01 We participants from Uganda gathered at ESAMI, Arusha for the Training Course on Management of Information Resource Sharing and Networking from 22nd October - 02 November, 1990 under the sponsorship of the German Foundation for International Development,

Recognising the importance of Information in the country's social, political and economic development,

Aware of the importance of Resource Sharing and Networking to maximise benefits from available resources,

Realising the need to take action for the establishment of resource sharing and networking system for Uganda,

Having noted the action and steps taken by Government and other organisations in order to establish a firm National Information system,

Do hereby propose the following for the establishment of an Information Resource Sharing and Networking system for Uganda with the following objectives:

.011 To ensure free flow of information among all the information institutions of the country in order to facilitate the information back-up for development planning and research co-ordination.

.012 To be able to have access to information from outside the country through a well-organised national information system.

.02 To achieve the above objectives, we propose the following:

To establish a National Information Network linking together all information institutions under different specialised sub-systems to one designated National Focal

Point as illustrated in the appendices with recommended channels of the flow of information.

.021 TOOLS

The sub-systems mentioned below should take initiative to produce the necessary tools which will facilitate the implementation of Resource Sharing e.g. Union Catalogues and Union Serial Lists of their respective holdings:

: University and Tertiary Education Institutions
: Banking, Legal, Trade and Industrial Institutions
: Agricultural Institutions
: Religious Institutions
: Public Libraries
: The National Documentation Centre produces the Uganda National Bibliography in collaboration with Makerere University Library.
: All other Ministries produce Union Catalogue and Union List of Serials.
: The National Resistance Council
: The Ministry of Health
: All other Non-Governmental Organizations.

.022 INFORMATION TECHNOLOGY

The National Information system or Focal Point should develop a National Data Base of all information resources available in all information systems linked to it. It should also take initiative to introduce, develop co-ordinate information technology in other information centres linked to it.

.023 TRAINING

It is important to train personnel manning information resource centres for the effective exploitation of their resources. Big subsystems such as Makerere University and Public Libraries Board should develop in-house continuing education programmes. Uganda Library Association should get more involved in short time courses/seminars, and the Ministry of Education should review its in-service programmes for school libraries.

.024 SUPPORT FROM DONOR COMMUNITY

We recommend that the Uganda Library Association should make an effort to approach International Donor Agencies to sponsor the proposed programmes in areas of their choice.

.025 FINANCIAL SUPPORT FROM PARENT ORGANIZATIONS

We further recommend the parent bodies to support the proposed programmes by giving financial support.

.026 IMPLEMENTATION

We realise that it would be difficult if not impossible to implement the proposals without laying down a strategy for implementation. We are also aware that some of our proposals cannot be implemented within the foreseeable future due to reasons mentioned before. We therefore propose their implementation in two phases:

.0261 SHORT TERM PROGRAMME

DATE		ACTION
1. November, 1990	-	Submission of proposals for Management of Resource Sharing and Networking by the Group Chairman to the Uganda Library Association Executive for noting and necessary action.
2. February, 1991	-	Uganda Library Association calls a general meeting to appoint a sub-committee of the Association to

establish and work out modalities for implementation.

- Subsystem nodes and co-ordinating centres are identified responsible officers appointed.

iii. March, 1991

- National Information System publishes Director of Resource Centres in the country.
- Sectoral interlending and photocopying services begin.
- Subsystem Co-ordinating Centres or nodes compile Union Catalogues, Union List of Serials and Accession Lists.

iv. April, 1991

- The National Documentation and Makerere University compile National Bibliography.
- Uganda Library Association contacts relevant authorities regarding improvement or restoration of telecommunication services to Resource Centres in

			collaboration with the National Focal Point. Similarly, individual Resource Centres approach the owners of parent Ministries/Organisations.
v.	July, 1991	-	Evaluation of Resource Sharing and Networking activities so far undertake by Uganda Library Association Sub-committee on Resource Sharing.
vi.	August, 1991	-	Resource centre start cross-staff attachment, induction and orientation courses at regular intervals.
		-	The East Africa School of Librarianship organises training course on Information Technology, or application of computer, or application of computer; or Resource Sharing.
		-	Sectoral co-ordination of collection development.

- Development of linkages between Tanzania and Uganda related information centre for resource sharing.

vii. October, 1991

- Uganda Library Association organises a general meeting to review progress.

- Institute of Teacher Education Kyambogo takes over the course for Library Assistant's from Makerere University.

- National Information system establishes standards for Libraries.

.0262 LONG-TERM PROGRAMME

1. The East Africa School of Librarianship starts higher degree courses in documentation, automation, etc.

2. Co-ordination of Collection Development by National Focal Point.

3. Establishment of Central Maintenance workshop/centre for maintenance of equipments, collection etc. by the National Information system.

We recommend that the Uganda Library Association should make an effort to approach International Donor Agencies to sponsor the proposed programmes in areas of their choice.

We further recommend the parent bodies to support the proposed programmes by giving financial support.

5. ETHIOPIA

.01 The participants evaluated the objectives, performance and problems experienced by the National Scientific and Technological Information Centre (NSTIDC) which was established in 1987.

.02 The participants proposed establishment of a broad network consisting of various nodes on sectorial basis such as trade, industry, food and agriculture, health, education, management etc.

.03 The network would comprise of both distributed and star models.

.04 Each node would be expected to develop regional sub-sectors each one of which would have its own focal point; each node would be linked to a national focal point.

.05 Some of the strategies proposed include:

: strengthening the Ethiopian Library Association;
: approval of the proposed national information policy
: etc.

.06 The implementation plan consists of short-term and long-term. The former covers 1992-93. It includes aspects such as submission of the Participants Report to the Ethiopian Library Association; setting up of a Co-ordinating Committee etc. The latter covers the period from 1994-2000. It includes acquisition of micro-computers, co-operative acquisitions of computers etc.

6. SUDAN

.01 The Participants discussed the objectives, benefits and hindrances that would affect information resources sharing in Sudan.

.02 The Participants saw the National Documentation Centre playing a critical role in the whole process of information resources sharing and networking in sudan.

.03 Aspects of resources sharing would include interlibrary lending, supply of copies of journal articles, sharing of professional experiences cooperative development and use of national data bases.

.04 The sectors identified includes Agriculture, Medicine, Science and Technology, Economics, Finance and Planning, Education Public Libraries and Archives etc. Each one of the sectors would have a note.

.05 The National Documentation and Information Centre would act as the national focal point catering for not only the sectors but also as the local focal point for regional and international information systems such as infoterra, PADIS, IBADD, CEHANET, AGRIS etc.

.06 The planning period consists of the short-term (1993-94) during which time a committee of five professionals to be responsible for information policy, identification of focal points etc. will have been appointed. During the medium-term (1994-1997) a sub-committee composed of heads of focal points should be appointed to produce quarterly newsletter standards for national union list etc. The long-term (1998-2000) should see full use of modern information technology, access to the world wide networks etc Some of the strategies for achieving the above include education and training, reactivation of the sudanese Library and Information Association etc.

7. DJIBOUTI

.01 The participants discussed the objectives and the role of the Centre National de Documentation (CND). The CND was seen as being responsible for formulating national information policy, support continuing education and training, and manage the legal depository system etc.

.02 The Action Plan covers the period from 1993-1998. It emphasizes the training of staff right from the beginning. It visualizes information service products such as visual aids, bibliographic data base, information worksheets.

.03 The participating institutions are encouraged to develop common standards such as indexing language, cataloguing code, classification schemes etc.

.04 The importance of protocols acceptable to all participating institutions is emphasized. Besides, in order to motivate the staff the terms and conditions of service of staff would have to be improved.

E. CONCLUSION

1. Information is an indispensable input in the development process. However, to be effective it has to be optimally available and accessible.

2. Over all, the improvements in information technologies such as online access, E-mail, desk top publishing, facsimile, CD-ROM etc. have simplified the processing of information. It is now faster, easier and more efficient.

3. The information professionals in the developing countries face a lot of problems in the process of acquiring, processing, storing retrieval and dissemination of information. Many of the problems are due to human, economic, cultural, professional and political factors. For instance, many libraries have outdated collections because they are starved of foreign exchange. They cannot

afford the CD-ROM. Some of the information services are not so easily accessible by the majority of would-be-users due to the highly centralised structure and the rather restrictive rules and regulations. This was ably demonstrated by the Archives Group from Kenya. Some of the professionals are not dynamic and pro-active. Given a situation where the authority is not fully aware of the importance of library facility the services managed by such static and passive professionals are not likely to receive adequate resources.

4. Properly planned and integrated a national information resources sharing networking system offers a solution to a lot of problems faced by the librarians and other information professionals in the developing countries. It would assist in fostering self-help, to exchange information, to change society, to improve productivity and work-life, to share resources (7). It would play the role of a catalyst or stimulant for developing the information services.

5. Aspects of information resources sharing would include staff expertise and training; equipment, bibliographic services; acquisition; storage; standards; inter-library lending; translations; research and development etc.

6. There are constraints that could make the success of the information resources sharing and networking programme. Some of them are real. Others could be based on fear. It is important to deal with them right from the planning stage. Some of them could be diffused through education and training.

7. Commitment and willingness to share are critical inputs in the information resources sharing programmes. They should be exhibited by all concerned; the parent organisations and the professionals. The presentations by the groups from Kenya, Tanzania, Uganda, Ethiopia, Sudan and Djibouti are an illustration of such commitment and willingness.

8. The presentations may differ in elaboration. But they all invariably agree that there is a need for a national central body to co-ordinate the information resources sharing and networking activities. Government, professional associations and the various institutions are seen as key players in this episode. For instance the University of Nairobi, and the National Agricultural Information and Documentation services at Kawanda etc.

9. The information professionals and professional associations especially have to take up the mantle to ensure that the ideas that were born in Arusha and Mombasa materialise. Jacques Valls said ably "Co-operation between information centres and the co-ordination of efforts needed to efficiently share resources implies the existence of an infrastructure linking the centres to one another, Agreement on the establishment of such links, and on the mode of interaction which should be adopted, is not easy to reach ..... Nevertheless, information specialists often prove they can, in fact, co-operate much more easily than politicians or business people, perhaps because they are aware that for them co-operation is a vital and natural component of their activities" (8).

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DSE IN BRIEF

The German Foundation for International Development (DSE) was created by the Federal and Land governments in 1959 on the initiative of all the political parties represented in the Federal Parliament. It was assigned the task of fostering the relations between the Federal Republic of Germany and developing countries on the basis of a mutual exchange of experience. The DSE fulfills this mandate by organizing training programmes, seminars and conferences to support projects in countries of Africa, Asia and Latin America, which serve economic and social development.

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